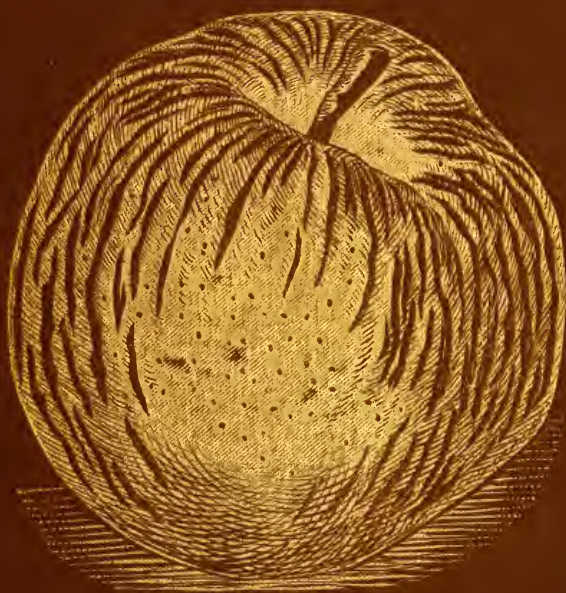


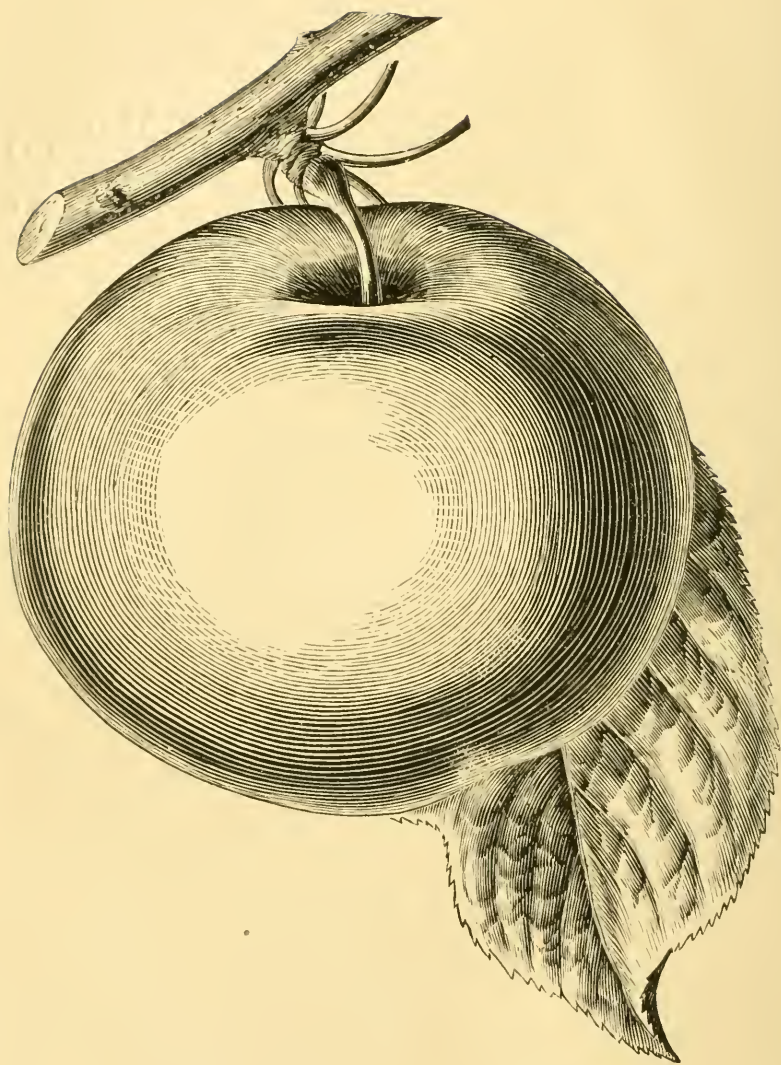
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WAGENER APPLE.

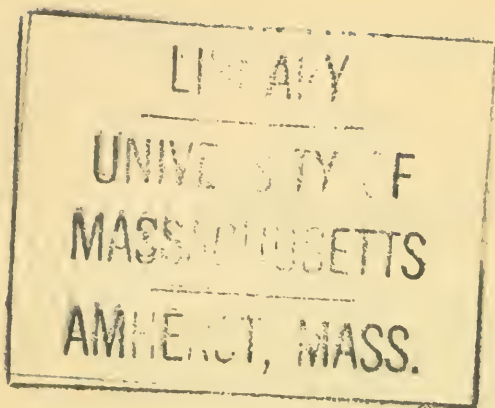
A native of New York. Tree thrifty, upright, hardy and an early bearer. Quality of fruit very good to best,—a very delicate apple. Ripe, November to February.—**DOWNING.**

FIRST ANNUAL REPORT
OF THE
SECRETARY
OF THE
MAINE STATE POMOLOGICAL SOCIETY,
FOR THE YEAR
1873.

Embracing the Transactions of the Society, from its organization up to and including the Winter Meeting and Fruit Growers' Convention, held in Augusta, January 28th and 29th, 1874.



AUGUSTA:
PRINTED FOR THE SOCIETY.
1874.



634.206

M 28

CHAPEL

1873-77

"All superfluous branches
We lop away, that bearing boughs may live."

—SHAKESPEARE.

"Let me urge upon you to plant trees. Their presence is an ornament to the earth—their fruits the consummation and reward of industry guided by knowledge."

—EZEKIEL HOLMES.

INTRODUCTORY NOTE.

The present report is submitted as a statement of the more important matters connected with the organization of the Society, and its first year's operations. It does not claim to be a record of successes achieved, nor of great progress, nor even an exposition of the fruit-growing interest of the State; but simply of the "beginnings" of the Society, and of its efforts to organize and develop that interest. If it shall be found to contain little of practical value, it will more fully exhibit the need of such a work as the Society proposes to do.

The Executive Committee entered upon their duties with many misgivings,—the work assigned them was new and the year was one of discouragement to fruit growers. Their aim has been to establish the Society upon a permanent basis and demonstrate its utility. The measure of success which has rewarded their efforts is due to the active co-operation of the members and the generous encouragement of the people of the State.

My personal acknowledgments are due to my associates for the uniformly kind assistance which has lightened the otherwise laborious duties of my position; to the gentlemen who have furnished valuable historical memoranda for these pages, and to the Secretary of the Board of Agriculture for his kind forbearance in allowing me to delay the completion of this report so as to embrace the proceedings of the Winter Meeting, as well as for many useful suggestions in relation to its preparation and arrangement.

GEO. B. SAWYER, *Secretary*.

WISCASSET, February 15, 1874.



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MAINE STATE POMOLOGICAL SOCIETY.

Officers and Committees for the Year 1874.

PRESIDENT,

Z. A. GILBERT, EAST TURNER.

VICE-PRESIDENTS,

GEORGE W. WOODMAN, PORTLAND,

A. L. SIMPSON, BANGOR.

SECRETARY,

GEORGE B. SAWYER, WISCASSET.

CORRESPONDING SECRETARY,

DR. J. C. WESTON, BANGOR.

TREASURER,

CHARLES S. POPE, MANCHESTER.

EXECUTIVE COMMITTEE,

The President and Secretary, *ex-officio*; Samuel Rolfe, Portland; James A. Varney, North Vassalboro'; Henry McLaughlin, Bangor.

TRUSTEES.

Rufus Prince, Turner, Androscoggin Co.; J. C. Madigan, Houlton, Aroostook Co.; S. F. Perley, Naples, Cumberland Co.; Hannibal Belcher, Farmington, Franklin Co.; C. G. Atkins, Bucksport, Hancock Co.; Joseph Taylor, Belgrade, Kennebec Co.; A. L. Bartlett, Union, Knox Co.; John Currier, Waldoboro', Lincoln Co.; William Swett, South Paris, Oxford Co.; Albert Noyes, Bangor, Penobscot Co.; Calvin Chamberlain, Foxcroft, Piscataquis Co.; Washington Gilbert, Bath, Sagadahoc Co.; Geo. O. Weston, Madison, Somerset Co.; J. W. Lang, Brooks, Waldo Co.; Wm. Freeman, Jr.; Cherryfield, Washington Co.; S. L. Goodale, Saco, York Co.

STANDING COMMITTEES.

On Apples and Pears.—S. L. Goodale, Saco; S. N. Taber, Vassalboro'; Ira D. Fish, Patten; Henry Ingalls, Wiscasset; Nathan Rogers, Troy.

On Grapes, Cherries, Plums and Small Fruits.—Henry McLaughlin, Bangor; Dr. J. B. Bell, Augusta; Dr. Eliphalet Clarke, Portland; E. P. Tobie, Lewiston; H. G. O. Alden, Belfast.

On Catalogue of Fruits for Maine.—Z. A. Gilbert, East Turner; S. L. Goodale, Saco; S. F. Perley, Naples.



Maine State Pomological Society.

TRANSACTIONS FOR 1873.

The Act of Incorporation of the MAINE STATE POMOLOGICAL SOCIETY provides, among other things, that "said Society shall have all the rights, privileges and powers conferred by the laws of this State upon county and local agricultural societies, and shall be subject to all liabilities imposed by existing laws upon such societies, so far as the same are applicable to the objects of this Society." This provision is understood to impose upon the Society the duty of making an annual report, through its secretary, to the Secretary of the Board of Agriculture, at the same time and in the same manner as county and local societies are required to make reports. (R. S. chap. 58, § 11.) But from the special character of the work assigned to this society by its charter, viz: "the promotion of fruit culture," the statute will be construed as so far "applicable to the objects of this society," as to authorize the secretary, while following the outline therein prescribed, to substitute the technical word "Pomology"* for the more general term, "Agriculture." With this necessary modification, the details called for by the statute will be embraced in the following pages and accompanying documents.

But it is proper at the outset, to give, in this first report, a history of the origin and organization of the Society, and a sketch of the causes which led to its formation. This will involve a glance at the history of fruit-growing in the State.

FRUITS INDIGENOUS TO MAINE.

It was long ago demonstrated that most of the fruits which are in a general sense adapted to temperate climates could be grown successfully in many portions of this State, and many of them in

* "POMOLOGY, n. The art or science of raising fruit."—*Webster*.

all parts of it. Indeed, many valuable fruits are indigenous to our soil. The late Dr. Holmes, in one of his published addresses, alluding to this subject, on the authority of William Morrell, who "came over in 1623, with Capt. Robert Gorges, to Wessagusset, which is now the town of Weymouth, Mass.," and staid a year, mentions as indigenous to New England, the wild cherry, filbert, walnut, and the ground nut, (*Glycine apios*,)* but some other authorities, with apparently better opportunities for observation than Morrell enjoyed, give a more extended list.

Josselyn, the author of "New England Rarities," who visited Maine in 1638, and again in 1663, remaining, the first time a little more than a year, and the last time eight years,—at the plantation of his brother, Mr. Henry Josselyn, (Deputy-Governor of the Province, &c.,) at Scarboro', and of whom Mr. Edward Tuckerman, in his introduction to a recent edition of that rare and curious book, says—"it may at least be said, that at the time he wrote, there is no reason to suppose that any other person knew as much as he did of the botany of New England,"—mentions, in addition to those named above, the strawberry, blackberry, raspberry, gooseberry, red and black currants, "Bill Berry" (whortleberry,) cloud-berry, cranberry, chestnuts, "*Haw-thorn*, the Haws being as big as Services, and very good to eat, and not so astringent as the Haws in England," [by which the editor supposes is meant *Crataegus tomentosa*, and perhaps, also, *C. coccinea*,] "Plumb Tree, several kinds, bearing some long, round, white, yellow, red, and black Plumbs, all differing in their Fruit from those in England."† "Vine [grapes] much differing in the Fruit, all of them very fleshy, some reasonably pleasant; others have a taste of Gun Powder, and these grow in Swamps, and low, wet Grounds."

Josselyn, however, does not *locate* the growth of the vine in New England, (a point in regard to which more will be said hereafter;) but in order to do this, we may have recourse to the works of Champlain, the chronicler who accompanied de Monts in his voyage of discovery along the coast, southward from the St. Croix, in 1605.

John de Laet, in a geographical work of high reputation, written in the Latin language, and published at Leyden, about 1614, gives

* Dr. Holmes also mentions the wild plum, cherry, strawberry, raspberry, oil nut and beech nut.

† "The plumbs of the country be better for plumbs than the cherries be for cherries. They be black and yellow; about the bigness of damsons; of a reasonable good taste." *Wood's New England Prospect*, chap. 5.

an account, chiefly derived from Champlain, in which he says,—
 “Four leagues south of the Kennebec, following the direction of the coast, there is a bay containing in its bosom a large number of islands, from which are seen the lofty summits of mountains on the main land. Eight leagues beyond, the river Chouacoet opens in lat 43 deg. 45 min., having several islands near its entrance, one of which was called by the French navigators the island of Bacchus, and by our countrymen, Wiingaerden Eylandt, (Vineyard Island,) from the great abundance of vines found growing there.
 * * * Walnut trees grow here, but inferior to ours; vines are abundant, and it is said by the French, that the grapes, gathered in July, make good wine.” (Folsom’s History of Saco and Biddeford, 1830, pp. 17, 18.)

“The ‘Island of Bacchus,’ with which the French navigators were so much charmed, is doubtless Wood Island. At the present time, however, the vine is not found there, nor the walnut.” (*Ibid* Appendix, A.)

Jenness (Isles of Shoals, p. 15,) quotes the narrative of Champlain, as trustworthy, and calls the island in question “Richman’s Island.”

Capt. Smith (1616) also speaks of “those rocky isles,” as “furnished with good woods, springs, fruits,” &c., but I am inclined to think he refers to the Isles of Shoals.

So great is the facility with which many European plants have adapted themselves to this country, that without the aid of earlier observers, it would be impossible, at this day to say as to many trees and plants now found growing here, whether they are exotic, or common to both hemispheres. And so, while the apple and pear have become “nearly naturalized in the United States,” and trees of both may be found growing wild in thickets and in the margins of woods in many places in New England, it is generally admitted that no variety of either is indigenous to this section;—the choke berry (*Pyrus arbutifolia*,) and the several species of thorns (*Cratægea*,) probably furnishing the nearest approach to them. But the spontaneous growth of other fruit-bearing trees, shrubs and vines, together with the fertility of the soil and the favorableness of the climate, as well as the high expectations *

* “The vines afford great store of grapes, which are very big, both for the grape and cluster; sweet and good. These be of two sorts,—red and white. There is likewise a smaller kind of grape which groweth in the islands [of Massachusetts Bay,] which is sooner ripe and more delectable; so that there is no known reason why as good wine may

entertained of the resources and capabilities of the new country, must have induced, and warranted the earliest settlers in attempting the improvement of the indigenous fruits by cultivation, and by such auxiliary and artificial means of amelioration as were then known, or as circumstances permitted them to employ; as well as in the introduction of the better fruits to which they had been accustomed in the mother country. As to how far and with what degree of success these processes were attempted in this State, prior to the beginning of the present century, we have only meagre accounts; but some isolated facts have been hastily gathered in relation to

THE HISTORY OF ORCHARDING IN MAINE,

which are introduced merely as contributions to an interesting historical study, and for the purpose of demonstrating that orcharding is not a "modern invention" in this State, but that it has a history reaching back to the time of the earliest settlement, quite as remote and full of interest, and as extensive in proportion to the population, as that of the same industry in the so-called "older States."

Dr. Holmes, in the address before referred to, (see Agricultural Report 1855, page 223,) says,—“It is very probable that the history of most of the orchards and fruit culture in Maine, being comparatively of recent date, might, by a little well-directed effort, be learned and recorded.” But this effort seems never to have been made; and hence it is, that while the history of every old orchard, and almost of every individual tree, in Massachusetts, has been sought out and recorded by diligent and competent students, Maine has no written history in that department; and this, doubtless, led Dr. Holmes to add,—“but that of the *older sections* of New England, whence Maine was settled, is not so easily ascertained.” This, of course, applies to the interior towns, which were in fact, settled largely from the sources indicated; and not to the older and original settlements on and near the seaboard; and I wish it understood that it is not my purpose to criticise, in a controversial spirit, the remarks of the learned Doctor, but rather to ascertain his true stand-point, and reconcile his statements with ascertained facts and necessary inferences.

It might be as truly said of Massachusetts as of Maine, “that not be made in those parts as in Bordeaux in France; being under the same degree.” *New England Prospect*, chap. V. Expectations which it has taken two centuries to realize!

the history of *most* of its orchards and fruit-culture, is comparatively of recent date." The instances recorded, of very old trees there, are, of course, confined to the limited area of the early settlements.

The people of the two sections, though differing much in their theological and political opinions, were of one nationality, and had interests and tastes in common. Communication by means of sailing vessels was easy and frequent. There were wealthy planters and prosperous farmers in both sections. Prior to the year 1640, the settlers in the vicinity of Pemaquid and the "Sheepscot Farms" (Newcastle,) were extensively engaged in agriculture, and in that year agricultural products were exported from the first mentioned point, to Massachusetts, (See "*Ancient Dominions of Maine*," by R. K. Sewall, Esq., pages 122-3.) Josselyn describes the population in the vicinity of Pemaquid as "magistrates, *husbandmen* and fishermen; of the magistrates, some be Royalists, the rest perverse spirits; the like are the planters and fishers, of which some be planters and fishers both—others mere fishers."

In this connection, I cannot forbear quoting again from Prof. Tuckerman's notes to "New England Rarities," wherein much valuable information has been collected bearing on the subject under consideration. At page 20, (Introduction,) he says in a note:

"Interleaved almanacs of 1646-48, cited by Savage (Winthrop N. E., vol. ii, p. 332), mention "Tankard" and "Kreton" (perhaps Kirton) apples, as well as Russetins, Pearmains, and Long-Red Apples; beside "the great pears," and apricots, as grown here.—In the Records of the Governor and Company of Massachusetts Bay (Records of Mass., vol. i, p. 24), there is an undated *memorandum*, "To provide to send to Newe England * * * stones of all sorts of fruites; as peaches, plums, filberts, cherries, pear, aple, quince kernells," &c., which the "First General Letter of the Governor," &c., of the 17th April, 1629, again makes mention of (*ibid.*, p. 392); and Josselyn (Voyages, p. 189) remarks on the "good fruit" reared from such kernels. But, if this were the only source of our ancestors' English fruit, the names which they gave to the seedlings must have been vague."

It seems reasonable to infer that some of these seeds were sent into Maine; as they were to be provided "to send to Newe England," and the settlements at Kittery, York, Scarborough, &c., and at Pemaquid and "Sheepscot Farms" embraced many persons who had been prominent and influential in the old country, and the art of husbandry was quite as far advanced with them as in Massachusetts proper. And Josselyn, it will be remembered, who mentions the "good fruit," spent almost the whole of his time while in New England, in Maine, and obtained *here* what

knowledge he had of the country. Moreover, he is charged by the editor of his works, (page 6,) with a "dislike to the Massachusetts government and people, which * * * may not unfairly be connected with his brother's political and religious differences with Massachusetts." This, together with his exclusive residence in Maine, gives to his rare and valuable works a local character, which is my only justification for having quoted from them so freely as I have done.

From these early plantings, most likely originated the trees near "Old Orchard beach" in Saco, now well known as a place of summer resort. "This name arose from a growth of apple trees formerly near the beach, planted at a very early period; some of them remained as late as 1770." (Hist. Saco and Biddeford, p. 314.) The apple tree is of comparatively slow growth, and, under favorable conditions, of long duration; and if we assign to these trees, which a hundred years ago were in the last stages of decay, the average longevity of their kind, it will carry the date of their planting back to an early period in the history of New England.

When we find scattering trees known to be of great age, the early individual history of which is not known, (as is the case with most of the very old trees in Maine,) we may well infer that originally there were others in the same locality, and that it is not those which were first planted which have survived the longest.

Happily, however, we are not left altogether to conjectures and inferences. We have well authenticated examples of trees planted and bearing fruit, in this State, early in the seventeenth century, and trees now standing indicating an age of more than two hundred years; a few of which will be cited.

The Maine Historical Society, in their field-day exercises at York, the site of the ancient "Agamenticus" or "Gorgeana," in 1870, had pointed out to them, the trunks of two apple trees, very much decayed indeed but one of them still bearing fruit. For the following particulars, which have not been published, I am indebted to Rufus K. Sewall, Esq., a member of the Society, and himself an indefatigable historian.

"The bearing tree stood on land which was originally the homestead farm of Thomas Gorges, an early mayor of "Gorgeana," and Governor of the Province, who established himself there about the year 1641. Tradition averred that this tree had been brought over from England in a tub, and re-planted where it then stood, more than two hundred years ago. The heart of the tree was

quite rotted out, but some leaf and fruit-bearing branches bore up with vigor against the decay and waste of time. The fruit was of small size, but fair; and several of the apples were gathered by the Hon. S. P. Benson, with a view to raise new stocks from the seeds."

Mr. Sewall also communicates information respecting some very old trees upon the farm of his father, Rufus Sewall, Esq., in Edgecomb, and in that vicinity, as follows:

"Orchard relics (of the pear, the large black cherry and apple) half a century ago marked the east bank of the Sheepscot, below Wiscasset bay, of which but one or two specimens now remain. A "pumpkin sweet," thirty inches in diameter at its base, spreading into a top of immense size and height, known to have been an old tree in 1805, but still fruitful, (the fruit elongated and of fair size) stands on this farm. A pear tree stood on a higher elevation and further back. Its fruit was small and hard, but of agreeable flavor. It was much decayed, but still fruitful, half a century ago; and has now entirely disappeared. There were apple trees of large size, bearing acid fruit, which have long since disappeared. Of the planting of these trees no record exists even in tradition. They mark the remains of ancient civilized homes of European life, and can only be accounted for on the hypothesis of an early English or French* colonization at this point."

Mr. Sewall also calls my attention to the following account which is condensed from his valuable work, "The Ancient Dominions of Maine:—"

In 1652, John Mason obtained title to a tract of land from "Oven's Mouth" to Sheepscot falls, which covered the site of an ancient plantation, appearing in the earliest records of English life in New England as the "Sheepscot Farms," of some fifty families, and known then as the "garden of the East," and is the site of

* It will be remembered that for a long period in the early history of Maine, the French government claimed jurisdiction of all the territory eastward of the Kennebec, and made many attempts at colonization along the coast. (Williamson's History of Maine; Johnston's Pemaquid.) The French people, in rural communities, have always been distinguished for their horticultural tastes. Hence, Longfellow, (Evangeline, part first,) in describing "the beautiful village of Grand-Pre," finds occasion to say—

"West and south there were fields of flax, and orchards and cornfields
Spreading afar and unfenced o'er the plain;"

—and I am informed by Dr. C. C. Hamilton, of Cornwallis, N. S., (a gentleman of high culture, and an enterprising pomologist,) whose estates lie in the same "beautiful valley," that as to the "orchards" at least, the lines quoted are literally true. He says some of the old trees are still, or were recently standing, in a decayed condition. The fruit was mostly sour and of inferior quality—similar to much of that found in the very old orchards of Maine.

the present towns of Newcastle and Edgecomb. Among the oldest relics of ancient civilization on the banks of the Sheepscot are found the remains of old apple trees.

Walter Philips was a noted gardener and public officer within this territory from 1660 to 1676. His house, *surrounded with an apple orchard*, stood on a great hill just below the lower, or "salt-water falls" of the Damariscotta river.

In 1676 the Sheepscot settlements were broken up and the inhabitants driven away by the Indians. Philips fled to Salem, Mass., and many of the other inhabitants to Boston, whence they returned in 1682. Prior to their return they met in Boston and "did jointly Bind themselves to stand to severall articles of Agreement," &c., one of which provided that "with the exception of their *fruit trees*, their barns and fencing stuff," they were "to relinquish all former rights, titles, and privileges." *

Hon. E. Wilder Farley of Newcastle, whose farm appears, according to Mr. Sewall's description above, to embrace the precise location of a portion of the Philips orchard, furnishes me the following interesting memoranda concerning the old orchards of Newcastle, information which was sought by me and furnished by him without any thought of the coincidence of location above referred to, but which seems to indicate the existence of an orchard still standing, with a continuous history of more than two hundred years; and may possibly entitle Walter Philips "the upright magistrate and planter of New Dartmouth" to the additional distinction of being the first regular orchardist in Maine. †

Mr. Farley's letter contains so much valuable information, not only with regard to the history of orcharding in his locality, but also on the theory and practice of orcharding in general, that I feel justified in inserting it at length, omitting only the formal parts. He says:

"My grandfather came on the farm, most of which I now occupy, in 1772 or 1773. My understanding is that its principal field, bordering on the Damariscotta river, was then pretty well cleared and cultivated. Fifty years since, there were standing in that field a dozen or more apple trees, most of them of large size, rough, homely and ancient; some of them two to two and one-half

* Thornton's Pemaquid papers.

† Circumstances seem to indicate, however, that the "Old Orchard" in Saco, the "Gorges tree" in York, and those mentioned as having stood on the upper "Sheepscot Farms," as well as some yet to be mentioned in the town of Bristol, were all of an earlier date than can be assigned with certainty to the planting of Philips' orchard.

feet in diameter. One, and the last, which I had cut about ten years since, was three feet or more in diameter. These trees were not set out with any regularity; they were in groups of two and three, and the groups from ten to thirty rods apart. Those trees are all gone; at the time mentioned they had evidently passed their prime. As a boy I tested the quality of their fruit as often as I could get it, being good for my pockets full at any one raid. As I recollect, the fruit was mostly summer and fall varieties and very toothsome; in shape and flavor different from the standard varieties now most common in New England. They had their names, some of which I recollect, for instance—Rusty Coat, a delicious little apple, shaped like a strawberry, rather dry; Bailey Apple, Long John, Betsey Apple, a family name; Honey Sweet, tree which was three feet in diameter; Miller Apple, from the mealy appearance of its skin.

Within the same field was a garden fenced in, containing a number of trees within the enclosure, one of which was called the Garden Sweet, and sweet it really was. These trees were smaller and evidently younger than those I have described as standing in groups, and were undoubtedly planted by my grandfather. They are gone.

Nearly opposite my house, and about seven rods distant from it, stands a large apple tree upon the old Barstow field, with which I have been familiarly acquainted for nearly all of the fifty-seven years I have lived in this world. It has changed very little in fifty years. Its fruit is poor in quality and quantity. It is two and one-half feet in diameter two feet from the ground. I have never tested the age of apple trees by counting the rings on the stump, but I should set the age of that tree at from one hundred and twenty-five to one hundred and fifty years. * * *

Some choke pear trees on the Hopkins farm, north of mine, one and one-half feet in diameter, now decayed, go back one hundred years at least.

Like myself, I suppose you have heard old people descant upon the productiveness of certain trees in their neighborhoods, bearing twenty-five, thirty and thirty-five bushels.

Did the first apple trees in Maine and other parts of New England of which we have any knowledge, attain to a greater size than their descendants? Did they produce more largely than their successors? If so, I think the virgin soil should have the credit."

Of a valuable apple formerly largely cultivated in the neighbor-

ing town of Bristol, Mr. Farley says: "I have it upon what I consider good authority, that the ancestral tree of the hightop-sweetings, once so common and productive on the farms in the Walpole District, formerly a part of Bristol, was brought from the south shore of Massachusetts, probably Hanover, one hundred years ago, by a member of the Woodward family (ship carpenters) which emigrated from there. Those trees are rapidly passing away."

The following facts have been kindly furnished by Dr. O. St. C. O'Brien of Pemaquid Falls, Bristol, an indefatigable student of the history of that interesting locality, (the settlement of which was effected in 1607,) tending to show that the first fruit trees cultivated in Maine, or probably, in New England, were at that point.

"There are the remains of some very old apple trees on both sides of the Pemaquid river, but nobody with whom I have talked has any tradition as to when they were planted, or by whom. I am credibly informed that some sixty years ago there were the remains of apple trees to be seen on what is called the 'Michael field,' at Pemaquid Falls. This is the place where Michael Clary, or McClary, was murdered by O'Neil, in 1788, whence it derives its name; it is also the spot where Thomas Gyles was murdered by the Indians in 1689." [Judge Gyles was attacked and slain by the Indians while at work with his sons in his own field.]

"The oldest tree, now living and bearing apples, in the town of Bristol, is on the farm of David Chamberlain, Esq. 'It is,' Mr. Chamberlain says, 'certainly known to be over two hundred years old.' It is a tree of very large size, and still bears a few small, sour apples. Fifty years ago it bore a large crop regularly every other year. It was a very large tree in 1745."*

"I have seen the remains of very old apple trees on the 'Point of Land' on the Damariscotta river, where Darius Wentworth lives, also in the woods directly west of Bristol Mills, where old cellars and the traces of cultivation are well-marked, but where the timber is now of considerable size. No one seems to know anything about their origin. I have no doubt they are the traces of the homes and plantations of settlers, who were driven away by the Indians, or who deserted them during the Revolutionary War."

* Mr. Chamberlain is a member of this Society, and a gentleman of unquestioned intelligence and veracity. His statements, made to me personally, and more fully than in Dr. O'Brien's letter, are substantiated by the most satisfactory evidence —Sec.

"In the year 1753, a party came up from the vicinity of the fort to fish for alewives, at the Pemaquid Falls; twelve of these were killed by the Indians. Their friends carried their bodies down in boats, and laid them under an apple tree which stood some fifty rods north of the fort. This tree was a very large and old one at that time. Mr. Hackleton says this on the authority of Mrs. Curtis, great-grandmother of Daniel and Sylvanus Curtis. There are persons now living who have heard her often tell the story and of her seeing the bodies under the apple tree. There can be but little doubt that this tree was planted by the very first settlers at Pemaquid."

"There are the remains of very old apple trees at New Harbor, in this town, which no person knows the history of. The father of Mr. William Plummer of South Bristol, came from New Hampshire in the year 1767, having purchased the 'Wirling' or 'Worling' place. He came prepared to plant apple trees, &c., but on his arrival found an orchard of large trees in good condition, some of which are still standing."

One more quotation from a high authority (North's History of Augusta, page 175,) is all that need be added in relation to the Pomological History of the ancient town of Bristol:

"JOHN NORTH, ancestor of the Norths of Augusta, came from Cloneen, in Kings County, Ireland, in about 1730. * * * In 1732, he removed to Pemaquid and settled at the head of Johns river, in the then newly-named Dunbar town of Harrington, now Bristol. There he built a house, cleared land, *set out apple trees and cultivated a garden ornamented with shrubs and flowers*, and died about ten years after, and was buried at Fort Frederick burying-ground, Pemaquid. The cellar of his house may be seen at the present day, the walls still standing; it is surrounded by shrubs, the damask and primroses and barberry bushes; and some very old apple trees remain which stood there when a lady now [1870] ninety-two years old came with her father to Bristol, at the age of six years, and they were 'very old trees then.'" Judge North adds in a foot-note, "MS. letter of Wm. Hackleton, Esq., dated Pemaquid, Oct. 9, 1869, who names Mrs. Blunt as the ancient lady. He says: 'There are remains of a brick-yard which tradition says was worked by the North family, and that he is informed the old people went to what was known as Mrs. North's garden to get *plum and cherry trees*, barberry bushes, &c. The ox-eyed daisy, or white weed as it is usually called,

was cultivated in, and spread from that garden all over our farms.' ”

I have thus presented, much more fully than was my original intention, the history of some of the remarkable orchards and individual trees found to have existed in the State during the seventeenth century. I do not claim to have presented anything new, (it is not the province of history to *create* facts) but to have collected from various and independent sources conclusive proof of the proposition laid down at the outset, that orcharding in Maine has a history quite as remote and instructive as in any other of the States. The citations made are chiefly from standard works of general or local history, and are all the more valuable because originally written as mere incidents of general history, and without the temptation to magnify their importance in the interest of Pomology. If they are thought tedious, I can only say that I have endeavored to make them sufficiently full to show their relation to times, places and persons; and my principal difficulty has been in determining, among the mass of materials found, what to omit in order to bring the work within reasonable limits.

In itself it is a matter of no consequence whether the old orchards of Maine are a few years older or more modern than those of other States; but every well authenticated record of success in the past is an encouragement for the future, and when people assert that “fruit cannot be grown profitably in Maine,” it is well to show them that it has been done, and to call to mind the homely adage, “what man has done man may do.”

The instances already cited of successful fruit culture, will serve to illustrate the period from the beginning of our history down to the commencement of the present century. Toward the end of that period orchards were multiplied in the State, not only on the seaboard but in the interior, to such an extent that it would be impossible within the proper limits of this report to record their history. I shall therefore, in the few remaining pages to be devoted to this part of the work, speak of persons and societies and of eras in fruit culture rather than of trees and orchards.

The beginning of the present century marks an important era in the history of improved fruit culture in the State, and the materials are not wanting for a full history of the subject from that time to the present.

PENOBSCOT FRUIT TREES.

E PHRAIM GOODALE of BUCKSTOWN, offers for sale for Cash or approved Credit, as low as can be purchased in New-England, and of as good a quality, the following

PEAR TREES,

Uvidales, St. Germaine,
St. Michael, St. James,
Large sweet York,
Small sweet York,
Premetive,
Monfieur John,
Windfor,

Blue, Sugar,
Englilh Sweet,
Davenport, Perry,
German, Baking, Bond,
Dergaloo, Jargonelle,
Catton, Burgamot,
Gardenelle.

N. B. Pear Trees are not subject to Lice.

APPLE TREES.

Bell's Early,
Maiden's Blufh,
Quince, Quincing,
Black Pippin,
Golden Pippin,
Nonfuch, Snout,

Yellow Geniton,
Warren Ruffet,
Stone Sweet,
Pumpkin Sweet, &c.
*Also....*A few Butternut,
Plumb & Quince Trees.

E. GOODALE, has spared no pains in selecting the best fruit, and by keeping them labelled, has ascertained what sorts are most congenial to this country. Every person knows the utility of transplanting from a kindred soil.

The labors of Dr. Vaughn in this direction are so well set forth in the address of Dr. Holmes, before referred to, and so well remembered in the county of Kennebec, to which his beneficence was chiefly confined, that it is hardly necessary to dwell upon them. Followed as they were by the disinterested efforts of Dr. Holmes himself, and many others, they years ago gave to that county a just pre-eminence as a fruit growing region,* and led to the organization of the old "Maine Pomological and Horticultural Society."

Very early in the century, Ephraim Goodale established a regular nursery for the propagation of trees, undoubtedly the first one in the State, in the present town of Orrington; and he issued a catalogue, meagre indeed in comparison with the voluminous and elegant nursery catalogues of the present day, but denoting great enterprise in the time and under the circumstances of its promulgation.† An exact *fac simile* of this circular or catalogue is presented herewith.

In 1821 we find him as "Judge Goodale of Orrington," (the recipient of well-deserved public confidence,) a contributor and liberal benefactor to the Penobscot Agricultural Society at its first exhibition. (Agricultural Report 1856, p. 15.)

It is worthy of remark that among the best contributions of fruit at our recent exhibition, was that of Mr. C. D. Chapman of Orrington, who occupies the old "Goodale farm."

Contemporaneously with the labors of Vaughn and Ephraim Goodale, or a little earlier, General Knox, at his homestead in Thomaston, was giving considerable attention to fruit culture.

* Dr. Holmes proceeds to say, speaking of Vaughn and his labors,—“and to this cause must we attribute the fact that there are more good varieties of apples to be found in Kennebec than in most other sections of Maine. I would not say this boastfully; for when we consider the rare opportunity that people in this neighborhood have had for enriching their grounds with these choice varieties, it is lamentable that ten times more had not been done.”

† The Hon. S. L. Goodale, in a letter written last summer, in answer to enquiries, says: “I send you herewith the only copy which I remember to have seen of what I suppose to have been the first catalogue of nursery trees issued in Maine. The date is wanting, but it was as long ago as when what is now Orrington was a part of *Bucks-town*, and from other facts I doubt not it was between 1804 and 1812. Ephraim, the “eldest of the brothers, and my father (now living at the age of 89,) the youngest, of a “large family, went there and took up farms near each other, about the beginning of “the century, and at once, or as soon as land was cleared, begun the culture of fruit,— “bringing trees from their home nurseries in Massachusetts. My father was compelled “by loss of health to leave soon after, but his brother continued for many years to raise “trees to sell and fruit for market.”

At about the same period, also, considerable attention was given to orcharding in Wiscasset. Prof. Packard of Bowdoin College, in a recent letter, from which I take the liberty to quote, speaking of his father, (who was for many years the minister of the first parish in this town,) after mentioning several parties who cultivated grafted fruit prior to 1812, says: "My father grafted his own trees, and was liberal as his means would allow, in encouraging the culture of apples, gooseberries, currants and cherries. He raised and ripened one quince, I remember. * * * * I think he introduced into the town the rhubarb plant, a root of which he received from Dr. Vaughn of Hallowell. Of apples he had but few varieties, and was not ambitious of multiplying varieties. As I remarked, [alluding to his address at the recent centennial celebration of the church of which his father was the pastor,] bred a farmer's son, he always took deep interest in agriculture generally, but without anything beyond the scanty science of that period."

Some plum trees and gooseberry bushes, taken from an English ship bound from Liverpool to Halifax, (captured by the privateer "Thomas," in 1813, and brought into Wiscasset as a prize,) were planted and fruited for many years, and from the stock thus obtained those fruits were propagated extensively.* These plants when taken were growing *in tubs*, and the fact is mentioned as illustrating the method of "packing" and transportation then in vogue. It also confirms the tradition in relation to the "Georges apple tree" at York, mentioned on page 11, which was "brought over from England in a tub."

Many other persons might be mentioned, did not the length of this report forbid it, who, in various sections of the State, interested themselves in fruit culture in the early part of this century; and whose labors are equally deserving of notice as those named. When the full history of orcharding in Maine shall be written, they will receive the grateful recognition to which they are entitled. My present purpose is to show by a few prominent examples, the actual condition of the fruit growing interest at consecutive periods, and its progress from time to time.

Coming down to about the year 1850, we find that at that period, fruit culture had extended over nearly all the settled parts of the State, apparently keeping pace with the other agricultural interests.

* Custom House Records, Wiscasset. James Taylor, Esq.

THE MAINE POMOLOGICAL AND HORTICULTURAL SOCIETY,

Organized in 1847, and chartered in 1854, exerted for a time a direct and powerful influence upon the business of fruit culture in the State. Among its members, or contributors to its exhibitions, were many of the men whose names are recognized as among the most successful fruit growers of the present day, and many equally well known who have deceased.* In 1855 it made at Gardiner, a most successful and varied exhibition of fruits. It is doubtful if a better show of apples and pears has since been made in the State, or could be at the present day. (Of grapes, many new and better varieties, native and hybrid, have been introduced since that time, and of foreign grapes, although there were then many cold graperies in the State, it is said none were exhibited.)

That society many years ago ceased to exist, and its records have been lost. Its career was brief but brilliant. From what can be learned of its proceedings and labors, from the earlier Agricultural Reports and from tradition, it seems to have started on the right track and to have had a prospect of great usefulness. During its brief existence it gave to the business of fruit culture a marked impetus. The statements and reports published, show a healthy interest in all parts of the State. Indeed, the decade from 1850 to 1860, seems to have been a propitious era in fruit culture in the State. During that period the State Society, just mentioned, the Bangor and Portland Horticultural Societies, the State Agricultural Society and most of the County societies were in active operation.

During the same period many gardens and orchards were planted, and in all parts of the State the attention of agriculturists and amateurs was directed to improved fruit culture. The progress made in the other States and in Europe, and the extensive circulation of horticultural journals and books had much to do with it. But from that time to the present, there has been, if not an actual decadence, a decrease of interest in the business.

The war, interrupting the arts of peace, turned mens' thoughts

* The following names are taken from the published report of the committee on *pears, plums and grapes*, at the exhibition of 1855: (I have not had access to any other reports, or an opportunity to learn who were the exhibitors in other departments) E. Swan, H. B. Hoskins, Dr. E. J. Ford, R. H. Gardiner, Esq., and Nathan Foster, of Gardiner; Dr. Moses Call of Newcastle; L. T. Jackson, Brunswick; John Currier, Waldoboro'; Mr. Kezar of Winthrop; C. Spaulding, Hallowell; F. Wingate, Augusta; S. L. Goodale, Saco; John Rogers, Kittery; J. F. Jennings, Wayne.

to other fields ; and hence, while trees and vines have been purchased and planted every year by hundreds of thousands, the cases are comparatively rare in which they have received that intelligent care which is essential to success. So that although it has been repeatedly demonstrated that fruit can be grown in Maine with as little labor and as great certainty as the average of farm crops, and with vastly more profit—a great majority of our people do not seem to realize the fact, perhaps do not believe in its possibility. And of the number who do embark to some extent in the business, few have the courage, persistence and faith to overcome all obstacles and make their ventures successful—to *act out and live up to* the oft quoted injunction of old John Gerarde, “Forward in the name of God, graft, set, plant and *nourish up* trees in every corner of your ground ; the labor is small, the cost is nothing, the commodities great ; yourselves shall have plenty, the poor shall have somewhat in time of want, to relieve their necessities, and God shall reward your good minds and diligence.”

EFFORTS OF OTHER SOCIETIES.

To the general statement just made, that since the days of the “Maine Pomological and Horticultural Society,” there has been a lack of progress in fruit culture in the State, there are notable local exceptions. The Portland Horticultural Society and the Bangor Horticultural Society, each in its respective locality, have given constant and praiseworthy encouragement and attention to this most interesting branch of industry ; so that Cumberland and Penobscot now rank with Kennebec as fruit-growing counties. And each of them has again demonstrated, as did the old State Society, that united and intelligent action, with competitive exhibitions and free discussion of theories, experiments and results, will any where produce a higher development than the utmost amount of isolated action and personal proficiency.

The several county and local agricultural societies and the State Agricultural Society, too, have, within the last score of years, given as much attention to the subject, as the great variety of objects demanding their encouragement would admit of. The Board of Agriculture, also, has by its discussions and published reports, done even more for the promotion of fruit culture than could have been expected from the character of its organization and objects.

In this connection honorable mention should be made of the Hon. S. L. Goodale, former Secretary of the Board of Agriculture, a pomologist by birth and education, who has for the last thirty years labored zealously for the promotion of this interest. His valuable papers on the subject, published in the reports of the Board, are among the best pomological literature of the present day, and have contributed to render those reports of incalculable value to the people of the State. It is to be regretted that at the organization of this society he was unwilling to accept the office of Secretary, for which he is so well fitted. That which to him would have been an easy labor, and to the public a valuable service, is to a novice a laborious duty.

It is not intended by the remarks previously made, to intimate that there has been a diminution in the fruit product of the State; for, in fact, the reverse is true. The census returns, which furnish the best data available, show a large increase from 1860 to 1870, not only in the gross product, but in proportion to the area of improved land and the population; but that increase is chiefly in the product of the large orchards which were planted in previous years, and being based on the *value* of the crop, is not conclusive as to the quantity. Our remarks apply rather to the lack of popular interest in Pomology as an art and a science.

The annexed table, based upon the census returns of 1870, will show that while Maine occupies an advanced position as a fruit producing state, with reference to the average of the whole country, she is far behind the first rank, being the fifteenth among the states and territories in the value of her orchard products per acre of improved land, and the sixteenth in the value of the same product *per capita* to each inhabitant.

TABLE Showing the value of Orchard Products per acre of improved land in the States and Territories where such value equals ten cents per acre of such land, and the value of same per capita to each inhabitant.

[The signs + and — indicate fractions of less than five mills.]

STATES AND TERRITORIES.	Total value of Orchard Products.	Value per acre of improved land.	Value per capita, to each inhabitant.
Maine,.....	\$874,569	\$0 30—	\$1.39½
New Hampshire,.....	743,552	.36+	2 34—
Vermont,.....	682,241	.22+	2 06+
Massachusetts,.....	939,854	.54+	.64+
Rhode Island,.....	43,036	.15—	.20—
Connecticut,.....	535,954	.33—	1.00—
New York,.....	8,347,417	.53+	1.90+
New Jersey,.....	1,295,282	.66—	1.42—
Pennsylvania,.....	4,208,094	.37—	1.19+
Delaware,.....	1,226,893	1.76—	9 81+
Maryland,.....	1,319,405	.45+	1.69—
Virginia,.....	891,231	.11—	.73—
West Virginia,.....	848,773	.33—	1 92+
District of Columbia,.....	6,781	.82+	.05+
Kentucky,.....	1,231,385	.15+	.93+
Ohio,.....	5,843,679	.40+	2 11—
Michigan,.....	3,447,985	.68—	2.91+
Indiana,.....	2,858,086	.28+	1 70+
Illinois,.....	3,571,789	.18+	1.41—
Wisconsin,.....	819,268	.14—	.28—
Iowa,.....	1,075,169	.11+	.90—
Missouri,.....	2,617,463	.29—	1.52+
California,.....	1,384,480	.22+	2.65—
Oregon,.....	310,041	.28—	3 41—
Washington,.....	71,863	.37+	3 00—
Utah,.....	43,938	.37—	.51—
Average of above,.....31+	1.55—
Total, United States,.....	\$47,335,189	.26—	1.23—

ACTION OF THE BOARD OF AGRICULTURE.

The State Board of Agriculture, (always solicitous for the advancement of the interests entrusted to its care,) took the matter into serious consideration. It was found that the existing agencies failed to awaken the required attention; that the current discussions in the farmers' meetings and the newspapers were often vague and desultory, that the experiments and improvements made in fruit culture were generally isolated—not extending much beyond the grounds on which they were made; and, in short, that there was need of a permanent, active and thorough organization, which should operate by systematic agencies in all parts of the State, and upon all classes of the people; teaching them that while the successful cultivation of fruit may require more skill,

care and patience, and a higher degree of intelligence than that of ordinary farm crops, yet that the requisite attainments are within the reach of every cultivator of the soil. The objects of such a society should be, to deduce from the experience of our best cultivators, aided by the transactions of other similar societies and the writings of standard authors, a system of Pomology adapted to the wants of the State, embracing the adaptation and preparation of soils, the selection of varieties, planting, training, protection from extremes of heat and cold and from diseases and insects, the methods of propagation and amelioration by artificial means, the proper application of manures and mulching, the uses and abuses of pruning, &c., together with the best methods for harvesting, marketing, preservation and utilization of the various fruits, and many other matters of greater or less importance; in other words, to fix and disseminate a correct knowledge not only of *general principles*, but also of *local practice*.

But just here came in the difficulty of finding individuals qualified and willing to undertake the work. Not but that we have enough *well qualified*, (such persons are found by scores in all our cities, and in greater or less numbers in many of our towns,) but because the organization and management of such a society could offer no pecuniary reward to those persons who should devote their time and energies to it, and because great individual success in this as in any other art, has a tendency to generate feelings of conceit and self complacency, and of corresponding indifference to the success of others.

All these considerations led the Board to present the question of the expediency of the attempt to organize such a society, to the people of the State with more than usual formality. At the meeting of the Board at Skowhegan, in October, 1872, previous notice having been given, the subject was considered, but "owing to the small attendance it was thought best, after discussion, to leave the subject in the hands of a committee," and Messrs. Z. A. Gilbert, J. A. Varney and A. L. Simpson were appointed as such committee. (Report of 1872, p. 405.)

That committee, prior to the next meeting of the Board, issued an "Address to the fruit growers of Maine," which was published in the papers of the State, inviting them to meet in convention at the then next session of the Board, to be held at Winthrop, January 14th-17th, 1873.

PROVISIONAL ORGANIZATION OF THE SOCIETY.

In accordance with this invitation, a considerable number of persons interested in the subject met at the time and place designated. The first day of the session was devoted to the consideration of the subject proposed, and after full discussion it was voted: "That it is expedient to establish such a society," and a committee was appointed to report a plan of organization and nominate officers for the society.

The committee reported, recommending that the society should be known as the "Maine State Pomological Society," and designating the following persons as officers, viz: President, Z. A. Gilbert of East Turner; Vice Presidents, Geo. W. Woodman, Portland, A. L. Simpson, Bangor; Secretary, Geo. B. Sawyer, Wiscasset; Corresponding Secretary, J. C. Weston, Bangor; Treasurer, Charles S. Pope, Manchester; Executive Committee, the President and Secretary, *ex officio*, and Samuel Rolfe of Portland, James A. Varney, Vassalboro', and Albert Noyes, Bangor; Trustees, (one from each county,) Rufus Prince, Turner, J. C. Madigan, Houlton, S. F. Perley, Naples, Hannibal Belcher, Farmington, J. B. Phillips, Dedham, Joseph Taylor, Belgrade, Harvey Counce, Thomaston, John Currier, Waldoboro', William Swett, South Paris, Henry McLaughlin, Bangor, Calvin Chamberlain, Foxcroft, Washington Gilbert, Bath, Geo. O. Weston, Madison, Hiram Chase, Belfast, J. C. Talbot, East Machias, S. L. Goodale, Saco.

The report of the committee was accepted by the convention; the effect of this acceptance being simply to designate certain persons who might thereafter associate themselves together, and with others proceed to organize the Society, under the sanction of the Board of Agriculture. The organization was provisional, and intended to extend no further than till such time as the society could act for itself.

Another committee was appointed to procure an Act of Incorporation for the Society, (the Legislature being then in session), who attended to that duty. [A copy of the Act is appended to this Report.]

THE PERMANENT ORGANIZATION.

The incorporators of the society met at Meonian Hall in Augusta on the 27th day of March, 1873, accepted the Act of Incorporation, adopted By-Laws embracing the form of organization proposed at Winthrop, and elected the officers who had been there nominated.

They also elected the Hon. Hannibal Belcher of Farmington as a member of the Board of Agriculture in behalf of said Society; chose delegates to the meeting of the American Pomological Society, to be held at Boston in September then following, and instructed the Executive Committee to make arrangements for an Autumn exhibition of fruits and flowers. This meeting was not as fully attended as had been desired and expected, owing to the interruption of travel by a severe snow storm, but sufficient interest was manifested to warrant the society in proceeding with the work for which it had been instituted.

At a meeting of the Executive Committee, held at Augusta, April 22, 1873, it was voted to appoint the following Standing Committees, whose duties should be to correct errors in nomenclature, examine new fruits and report upon the same at the annual meetings, viz :

ON APPLES AND PEARS. S. L. Goodale, Saco ; S. N. Taber, Vassalboro' ; Ira D. Fish, Patten ; Henry Ingalls, Wiscasset ; Nathan Rogers, Troy.

ON GRAPES, CHERRIES, PLUMS AND SMALL FRUITS. Henry McLaughlin, Bangor ; Dr. J. B. Bell, Augusta ; Dr. Eliphalet Clarke, Portland ; E. P. Tobie, Lewiston ; H. G. O. Alden, Belfast.

It was also decided, upon a conference with the officers of the State Agricultural Society, to hold the Autumn exhibition at Bangor at the time of the annual Fair of that society ; the latter agreeing not to make any exhibition in the departments pertaining to this Society.

The Executive Committee met again, at Bangor, on the 18th and 19th of June, when they made arrangements with the officers of the Bangor Horticultural Society for holding the exhibition jointly with that society, securing the active co-operation of that efficient organization, and the benefit of its long and successful experience. A schedule of premiums was adopted,—the premiums offered amounting to \$598.00,—rules for the exhibition established, awarding committees appointed, and the arrangements substantially completed. It was believed that notwithstanding the exceptionally unfavorable preceding winter, and the consequently light crop of growing fruit, the novelty of the exhibition, the liberal premiums offered and the resources of the orchardists and horticulturists of Bangor and its vicinity, trained by long practice almost to perfection in the arts of production and exhibition, would enable us to make a creditable display. These expectations were partially

defeated by the severe gale of August 24th, which extended over the whole State, destroying the better portion of what fruit we had, and reducing the aggregate production to the lowest minimum for many years.

THE FIRST ANNUAL EXHIBITION

was held at the City Hall, in Bangor, on the 16th, 17th, 18th and 19th days of September. The attendance of exhibitors and spectators, though not as large as could have been desired, was satisfactory under the discouraging circumstances of the year, and, as the officers believed, demonstrated the expediency of the organization of the Society. The financial results will appear in the appended reports of the proper officers. It is sufficient to say here, that by economical management, the committee were enabled to pay the premiums awarded, amounting to \$516.00, in full, and avoid the contraction of any permanent debt.

Of the exhibition, it may be said that notwithstanding the discouragements before alluded to, the efforts of the executive committee, aided by the cordial co-operation of fruit growers, were so far successful, that the exhibition was pronounced by those who visited it, the best fruit and floral exhibition ever held in the State. The hall was well filled with the numerous contributions, representing nearly every section of the State.

The arrangement of the exhibition was good and was a credit to the good taste and judgment of the ladies and gentlemen of the Bangor Society, who had it principally in charge. The main floor of the hall was arranged with three double tables extending through its entire length, on which were tastily arranged, each by itself, the different kinds of fruit. These tables were ornamented with an occasional bouquet, which gave a very pleasing effect. The cut flowers were shown in inclined racks, arranged across the rear of the hall, upon the elevated platform, flanked by tables of pot plants. Floral designs, &c., filled other tables arranged in the vacant corners. Thus a view of the whole exhibition could be had at a glance on entering the hall.

The fruit was nearly all uniformly labelled with small printed labels in heavy black type, furnished by the Society, and fastened in a conspicuous place upon each dish of fruit. The name could thus be read at a glance, which saved much handling by those looking at the fruit. For the benefit of the committees—that their work might be more expeditiously and faithfully performed, the

names of the several kinds entered for a given premium, were written upon an entry card furnished by the Society, and the several dishes containing them were arranged in groups by themselves. This made the work of the committees, otherwise so perplexing, very much easier.

There were in all some fifteen hundred dishes of fruit—nearly all standard varieties—and about the same number of bottles of cut flowers, two collections of pot plants, a large number of bouquets, floral designs, wreaths, pressed flowers, dried grasses, &c., &c. The names of the principal contributors were as follows : S. C. Harlow, Bangor, 61 varieties apples, 5 of pears, several varieties each of plums and grapes, and an ornamental dish of fruit. A large dish of Flemish Beauty pears were fine for the season and the best on exhibition. Joseph Taylor, Belgrade, 40 varieties apples, 13 of pears, besides plums, grapes and canned fruits. Albert Noyes, Bangor, 50 varieties of apples and a large collection of pears, all choice and standard kinds, correctly labelled. Alfred Smith, Monmouth, 40 varieties of apples, several plates of pears, 8 of grapes, 1 of plums; this was a good collection. J. C. Mower, Greene, 50 of apples, very large and fine. C. D. Chapman, Orrington, 60 of apples and 22 of pears, all standard varieties. Rufus Prince, Turner, 31 of apples and a good collection of native grapes. Atherton Brothers, Hallowell, 30 of apples. Jennings Brothers, North Wayne, a large collection of apples, 2 varieties of pears, and a plate of quince. O. L. Carter, Etna, 26 of apples. W. S. Place, Charleston, 20 of apples, several varieties pears and plums. Z. A. Gilbert, 30 of apples and several plates of pears. Other creditable collections were shown by F. M. Woodward of Winthrop; Albert Emerson of Bangor; J. Pope & Sons of Manchester; Mr. Foss of Charleston, and several others.

Native grapes and those grown in cold graperies were not as well ripened as is usual at that season, and the contributions in this class were consequently much smaller than would have been the case had the season been favorable for ripening. J. C. Weston, Bangor, showed a large collection of native grapes, and a collection of foreign grapes, very choice for the season; also a collection of pears. Henry Ingalls, Wiscasset, a large collection of foreign and native grapes, and 12 varieties of plums. Mrs. F. Hobbs, Bangor, a large collection of very fine foreign grapes. G. B. Sawyer, Wiscasset, 6 varieties of foreign and 20 of native grapes, 3 of plums, 5 of pears, 1 of nectarines. E. Perkins, Old-

town, collection of foreign and native grapes and 4 varieties of pears. Albert Emerson, Bangor, collection of foreign and native grapes, plums and apples. C. Chamberlain, Foxcroft, and J. A. Varney, North Vassalboro', each a large collection of native grapes. Hot-house grapes were shown by T. Allen and Mrs. J. Eddy, Bangor,—all very fine.

A. L. Simpson and W. C. Crosby, Bangor, each plums and grapes. Dr. Wm. Gallupe a fine plate of Hartford grapes and a dish of unusually fine Washington plums. The exhibition of plums was one of the finest and most extensive ever seen in the State. It far excelled that of the American Pomological Society at Boston the week before. In addition to the contributions mentioned above, S. S. Low, Bangor, showed a large collection of first class specimens, attractively arranged. Elijah Low, Bangor, a collection equally creditable—also five of pears. S. Alden, Bangor, five plates of plums and four of pears. Arad Thompson and G. W. Merrill, Bangor, and J. Clark, Winterport, each contributed to this department. Canned fruits in good variety were shown by Mrs. W. C. Crosby, Bangor; Mrs. G. D. Lougee, Exeter; Chas. Copeland, Holden; Joseph Taylor, Belgrade; and preserves, jelly and wine from Transcendent crab apples by C. T. Jellerson, Lewiston.

Flowers in great variety and beauty were shown by a large number of florists in Bangor and vicinity, and also by Mrs. A. B. Strattard, Monroe, and Mrs. Chas. Stanley, East Winthrop, each of whom have won worthy laurels at former floral exhibitions in the State. Mrs. Stanley's specimens were fine for the season, and were kept remarkably fresh and perfect, notwithstanding their long journey before being set up. A floral monument containing several hundred different specimens, arranged by her skilful hand, deservedly attracted much attention. Albert Noyes, Bangor, showed about 300 specimens of cut flowers in great beauty and variety. Other leading contributors were Mrs. N. T. Swan, Brewer; Mrs. Burleigh Pease, Mrs. I. S. Whitman, Mrs. W. S. Whitman, Bangor; Mrs. J. E. Green, Mrs. C. C. Barrett, Brewer; Mrs. G. D. Lougee, Exeter; Miss Eliza W. Eaton, Bangor; J. C. Weston, Bangor, collection of dahlias; Mrs. Wm. S. Dennett, Bangor, asters, very fine; Mrs. W. C. Crosby and Mrs. J. Moody, Bangor, each a collection of pansies. Mrs. J. B. Burr, Brewer, Ezra Perkins, Oldtown, Mrs. Arad Thompson, Bangor, Mrs. C. O. Farrington, Brewer, each contributed bouquet. Mrs.

A. L. Simpson, Bangor, floral design ; Fannie M. Roberts, Brewer, pot plants ; Mrs. Frank Taylor, Bangor, Oleander ; Miss Louise McLaughlin fall crocus. Still others made smaller contributions.

An attractive feature of the exhibition was a large collection of fruit, secured by the officers of the Society from contributions to the American Pomological Society's exhibition at Boston. This was made up of choice specimens from all sections of the country, prominent among which were the collection of native grapes from Hoag and Clark, and the collection of pears from E. Moody and Sons, Lockport, New York, the latter embracing 117 varieties. A collection of apples from Polk County, Iowa, consisting of 140 varieties—135 of which were correctly named—were presented entire for exhibition at Bangor by Dr. Mark Miller of Des Moines. This collection was awarded a medal at Boston, as a special premium, in appreciation of the great correctness of nomenclature and general fairness, size, and beauty of the specimens. Smith & Powell of Syracuse, N. Y., contributed a fine collection of fruit, including specimens of a new crab apple of large size and fine appearance, introduced by them and named *Aucubafolia*, which it is suggested may prove a valuable variety for the colder sections of this State. From California there was an extensive collection of fruit noticeable for the enormous size of the specimens, embracing apples, pears, grapes, lemons and oranges, secured by the courtesy of the Hon. M. P. Wilder. The Nebraska State Horticultural Society, through Gov. Furnas, its President, contributed a large and splendid assortment of apples and pears. Col. E. Daniel of Richmond, and other parties furnished fine specimens of the fruits of Virginia. There were also collections from Delaware, Ohio, Louisiana, Kansas, and Utah, and from Canada and Nova Scotia. These, besides making a most attractive exhibition, afforded the pomologists of Maine a rare opportunity to compare their own productions with those of other sections of the country as well as to study the nomenclature of those sections.

The several awarding committees were composed of competent persons, and their work was performed in a manner creditable to themselves and satisfactory to the Society. The premiums awarded were as follows :

LIST OF PREMIUMS.

Class I.—Apples.

For the best general exhibition of apples :

1st premium, S. C. Harlow, Bangor.....	\$20 00
2d " Joseph Taylor, Belgrade	15 00
3d " Alfred Smith, Monmouth.....	10 00

For the best twenty named varieties :

1st premium, John C. Mower, Greene.....	15 00
2d " S. C. Harlow, Bangor.....	12 00
3d " Rufus Prince, Turner.....	8 00

For the best ten named varieties :

1st premium, Joseph Taylor, Belgrade	12 00
2d " C. D. Chapman, Orrington.....	8 00
3d " F. N. Woodward, Winthrop.....	5 00

For the best five named varieties of Fall apples :

1st premium, Alfred Smith, Monmouth.....	8 00
2d " W. S. Place, Charleston.....	5 00
3d " S. C. Harlow, Bangor....	3 00

For the best five named varieties of Winter apples :

1st premium, Joseph Taylor, Belgrade.....	8 00
2d " Jennings Bros., North Wayne	5 00
3d " W. S. Place, Charleston.....	3 00

For the best single variety of Fall apples :

1st premium, Joseph Taylor, Belgrade	3 00
2d " Albert Emerson, Bangor.....	2 00

For the best single variety of Winter apples :

1st premium, S. C. Harlow, Bangor.....	3 00
2d " Joseph Taylor, Belgrade	2 00

For the best dish of Rhode Island Greenings, John C.

Mower, Greene.....	2 00
Baldwins—John C. Mower, Greene	2 00
Northern Spy—Otis L. Carter, Etna.....	2 00
Roxbury Russets—Alfred Smith, Monmouth	2 00
Hubbarston Nonsuch—Jennings Bros., North Wayne.....	2 00
Nodheads—Alfred Smith, Monmouth.....	2 00
Gravenstein—John C. Mower, Greene.....	2 00
Porters—Alfred Smith, Monmouth.....	2 00
Red Astrachan—S. C. Harlow, Bangor.....	2 00
Duchess of Oldenburg—Albert Noyes, Bangor	2 00
Seedling Apples—Charles B. Crowell, Belgrade.....	3 00
Crab Apples—C. T. Jellerson, Lewiston.....	1 00

The committee append to their report the following remarks :

"We consider a seedling named *Orange*, exhibited by Z. A. Gilbert of East Turner, as worthy of honorable mention. A seedling of the *Porter*, exhibited by S. C. Harlow of Bangor, may prove valuable. Henry McLaughlin of Bangor presented, for exhibition only, a fine collection of Loudon Pippins.

"Exhibitors will observe that for all premiums except that 'for the best general exhibition,' the fruit must be arranged according to the schedule prescribed by the Society. In some cases this was done, and in others it was not. If the rules had in *all cases* been complied with, it is probable that the awards in some instances might have been different from those in this report." * *

HENRY INGALLS,	}	<i>Committee.</i>
AVERY W. MARRETT,		
JOHN CURRIER,		

Class II—Pears.

For the best general exhibition of pears :

1st premium C. D. Chapman, Orrington	\$20 00
2d " Albert Noyes, Bangor.....	15 00

For the best ten named varieties :

1st premium, Dr. J. C. Weston, Bangor.....	12 00
2d " Joseph Taylor, Belgrade	8 00

For the best five named varieties :

1st premium, Alfred Smith, Monmouth	8 00
2d " S. C. Harlow, Bangor.....	5 00

For the best dish of pears :

1st premium, S. C. Harlow, Bangor.....	3 00
2d " Albert Emerson, Bangor.....	2 00

For the best seedling pears :

Henry McLaughlin of Bangor, for the varieties originated by him, named Eastern Belle and Indian Queen.....	3 00
<i>Gratuity</i> , H. W. Brown, Bangor, for seedling pears.....	1 00

The Committee say : " Although by reason of the great drouth of the summer, and other adverse influences, the exhibition of pears grown in Maine has necessarily been small, and many of the samples unsatisfactory, enough appears to afford encouragement for the future success of pear culture in Maine. We are aware, too, that by a special effort to induce contributions, a much finer display might have been made. * * * We deem the thanks of the Society due to the following named persons, who have ex-

hibited fruit of much merit, viz.: Elijah Low of Bangor, 5 varieties; Silas Alden, Bangor, and Ezra Perkins, Oldtown, each 4 varieties; S. S. Low, Bangor, and W. S. Place, Charleston, each 3 varieties; Edwin Colburn, Bangor, and Jennings Brothers, No. Wayne, each 2 varieties; G. B. Sawyer, Wiscasset, 6 varieties; A. L. Simpson and Wm. Gallupe of Bangor, each 1 variety.

Your Committee further beg leave to notice with pleasure and high commendation the many excellent samples of pears on exhibition from the States of New York, Delaware, Virginia and California. All these samples are highly creditable to the several States, and a large proportion of them are of attractive and striking qualities." * * * *

W. GILBERT, *for the Committee.*

Class III—Plums and Peaches.

For the best general exhibition of plums:

1st premium, S. S. Low, Bangor.....	\$6 00
2d " Elijah Low, Bangor.....	4 00
Gratuity—Henry Ingalls, Wiscasset.....	3 00
Gratuity—Silas Alden, Bangor.....	3 00

For the best dish of plums of a single variety:

1st premium, William Gallupe, Bangor.....	3 00
2d " Arad Thompson, Bangor.....	2 00

"The display of plums was a magnificent one, and was never excelled at any exhibition in the State." * * *

C. D. CHAPMAN,	} <i>Committee.</i>
JOSEPH TAYLOR,	
MRS. C. D. CHAPMAN,	
MRS. A. B. STRATTARD.	

Class IV—Grapes.

For the best exhibition of foreign grapes grown in hot house culture:

1st premium, Mrs. Jonathan Eddy, Bangor.....	\$10 00
2d " Thomas Allen, Bangor.....	8 00
Gratuity—Mrs. Jonathan Eddy, Bangor, for single specimens.....	2 00

For the best exhibiton of foreign grapes, grown in cold grapery:

1st premium, Dr. J. C. Weston, Bangor.....	10 00
2d " Mrs. F. Hobbs, ".....	8 00

3d premium, Albert Emerson, Bangor.....	5 00
For the best cluster of Black Hamburg, Dr. J. C. Weston, Bangor.....	2 00
White Chasselas—G. B. Sawyer, Wiscasset.....	2 00
White Frontignan—Dr. J. C. Weston, Bangor.....	2 00
Grizzly Frontignan—Dr. J. C. Weston, Bangor	2 00

For the best exhibition of grapes grown in open air:

1st premium, Henry Ingalls, Wiscasset.....	12 00
2d “ G. B. Sawyer, “	10 00

<i>Gratuity</i> to G. B. Sawyer for four varieties native grapes grown under glass.....	2 00
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For the best five varieties, open air:

1st premium, Dr. J. C. Weston, Bangor.....	5 00
2d “ Rufus Prince, Turner	3 00

For the best single variety, open air:

1st premium, James A. Varney, North Vassalboro'	3 00
2d “ W. C. Crosby, Bangor	2 00

For the best six bunches, Delaware, W. C. Crosby, Bangor.....	1 00
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For the best six bunches, Allen's Hybrid, W. C. Crosby, Bangor.....	1 00
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The committee also notice favorably the collections of native grapes exhibited by Albert Emerson and A. L. Simpson of Bangor, Ezra Perkins of Oldtown, J. A. Varney of North Vassalboro', and Calvin Chamberlain of Foxcroft; also collections of foreign grapes by Henry Ingalls and G. B. Sawyer of Wiscasset and Ezra Perkins of Oldtown, as well as the extensive exhibitions of grapes from other States.

J. M. CARPENTER,	} Committee.
IRA E. GETCHELL,	
ELIPHALET CLARK,	

Class V.—Miscellaneous.

For the best ornamental dish of fruit:

1st premium, S. C. Harlow, Bangor.....	5 00
2d “ Mrs. A. B. Strattard, Monroe.....	3 00

For the best exhibition of canned fruits:

1st premium, Mrs. W. C. Crosby, Bangor	5 00
2d “ Mrs. G. D. Lougee, Exeter	3 00
3d “ Charles Copeland, Holden	2 00

<i>Gratuity</i> , C. T. Jellerson, Lewiston, for crab apple jelly, preserves, &c.....	2 00
<i>Gratuity</i> , Mrs. J. P. Bent, Bangor, for apple jelly	1 00
[Same Committee as in Class III.]	

Class VI—Flowers.

For the best display of cut flowers :

1st premium, Albert Noyes, Bangor.....	8 00
2d " Mrs. A. B. Strattard, Monroe.....	6 00
3d " Mrs. John E. Greene, Brewer.....	4 00
Special premium for the best arranged table of flowers, Mrs. Wm. S. Whitman, Bangor.....	8 00

For the best twenty named varieties :

1st premium, Mrs. C. C. Barrett, Brewer.....	6 00
2d " Mrs. G. D. Lougee, Exeter.....	4 00

For the best fifteen named varieties :

1st premium, Miss Eliza W. Eaton, Bangor.....	5 00
2d " Mrs. Isaac S. Whitman, Bangor.....	3 00

For the best ten named varieties :

1st premium, Mrs. N. T. Swan, Brewer.....	3 00
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For the best exhibition of roses, Mrs. A. B. Strattard, Monroe, 2 00

Dahlias—Mrs. Charles Stanley, Winthrop..... 2 00

Japan Lilies—Mrs. Isaac S. Whitman, Bangor..... 2 00

Asters—Mrs. Wm. S. Dennett, Bangor..... 2 00

Gratuity, T. L. Dodd..... 2 00

Pansies—Thomas Allen, Bangor..... 2 00

Phlox Drummondii—Mrs. C. C. Barrett, Brewer..... 2 00

Stocks—Mrs. Isaac S. Whitman, Bangor..... 2 00

Petunias—Miss Eliza W. Eaton, Bangor..... 2 00

Gladiolus—Albert Noyes, Bangor..... 2 00

For the best pair of parlor bouquets :

1st premium, Mrs. Wm. S. Whitman, Bangor..... 5 00

2d " Mrs. J. B. Burr, Brewer..... 4 00

3d " Thomas Allen, Bangor..... 3 00

For the best single bouquet :

1st premium, Mrs. C. O. Farrington, Brewer..... 3 00

2d " Mrs. Wm. S. Dennett, Bangor..... 2 00

For best pair of hand bouquets, Mrs. J. B. Burr, Brewer... 3 00

For the best single hand bouquet, Mrs. G. D. Lougee, Exeter, 2 00

For the best floral design :

1st premium, Mrs. Charles Stanley, Winthrop.....	10 00
2d " Mrs. A. L. Simpson, Bangor.....	6 00
For the best dish of flowers, Mrs. G. D. Lougee, Exeter....	3 00
For the best exhibition of pot plants:	
1st premium, Thomas Allen, Bangor.....	8 00
2d " Miss Eliza W. Eaton, Bangor.....	6 00
For the best single pot plant:	
1st premium, Mrs. A. L. Simpson, Bangor (Amaryllis).....	2 00
2d " Mrs. Frank Taylor, Bangor (Oleander).....	2 00
For the best exhibition of dried grasses:	
1st premium, Mrs. C. C. Barrett, Brewer.....	2 00
2d " Mrs. Charles Stanley, Winthrop.....	1 00
For the best exhibition of everlasting flowers:	
1st premium, Mrs. John E. Greene, Brewer.....	2 00
2d " Mrs. G. D. Lougee, Exeter.....	1 00
<i>Gratuity</i> , Mrs. C. C. Barrett, Brewer, for pressed flowers...	1 00
<i>Gratuity</i> , Mrs. W. C. Crosby, Bangor, for basket of flowers,	1 00
<i>Gratuity</i> , Mrs. Chas. Stanley, Winthrop, for moss wreath...	1 00
<i>Gratuity</i> , Mrs. C. C. Barrett, Brewer, for Nasturtions.....	1 00
<i>Gratuity</i> , Miss Louisa McLaughlin, Bangor, for Fall Crocus,	1 00

ELIJAH LOW,	} Committee.
B. A. BURR,	
O. H. INGALLS,	
MRS. CHAPIN HUMPHREY,	
MISS ADA L. LOWELL,	

It would be interesting to classify the several varieties of fruit exhibited in the different classes, with reference to their adaptability to the various sections of the State, as shown by this exhibition, but as the society has in progress measures for the preparation of a full and reliable "catalogue of fruits" to be recommended for cultivation in each of the several counties, I deem it judicious to withhold any statement imperfectly covering the same ground.

During the continuance of the exhibition the society held its annual business meeting as provided by its by-laws, and a public meeting for addresses and discussion. At the latter the opening address was given by the President, Z. A. Gilbert, and the annual address by Hon. J. E. Godfrey, of Bangor, both of which are published in full on subsequent pages. Dr. Allen, of the State College, made remarks upon the general subject of fruit culture, and alluded

to the pilfering of vicious persons, so discouraging at times to fruit growers. W. Gilbert, Esq., of Bath, spoke of the necessity for a higher cultivation that we may produce better fruit. This high cultivation is not needed on the new lands of the West, and was not necessary here when our lands were new. We are now trying to grow good fruit with only the same efforts that were then required. Of course it cannot be done, and hence a larger per centage of our fruit is not first class. Success will depend largely on an intelligent, thorough cultivation. He also alluded to the necessity for a higher moral culture among the masses as necessary to the protection of the fruit growers, and far more effectual than legal prosecutions. Several other gentlemen alluded to the advantages of high cultivation.

At the business meeting the officers were elected for the ensuing year; a committee appointed to revise the by-laws; votes of thanks were passed to the President and Judge Godfrey for their addresses, and to the contributors of fruit from other States for their generous contributions; and the executive committee were instructed to make arrangements for a winter meeting of the Society, to be held at Augusta on the fourth Wednesday of January, 1874, for the presentation of the annual reports of the officers, and the transaction of other business, including a Fruit Growers' Convention,—to which time the meeting was adjourned.

It is proper to note that the society was represented, in accordance with its vote at the meeting of March 27th, and the subsequent special and kind invitation of President Wilder, at the biennial (and quarter centennial) session of the American Pomological Society, held in Boston on the 10th, 11th and 12th of September last. The delegates attending were Z. A. Gilbert, President; A. L. Simpson, Vice President; G. B. Sawyer, Secretary; Henry McLaughlin, of the Trustees; Henry Ingalls, Esq., of Wiscasset; S. L. Boardman, Secretary of the Board of Agriculture; Calvin Spaulding and W. P. and H. N. Atherton of Hallowell.

That Society was invited to Boston by the Mass. Horticultural Society, and the arrangements made by the latter Society embraced every attention which the most liberal hospitality could suggest for the entertainment of the members, delegates and guests.

Nearly every State and Territory in the Union, as well as the British Provinces, were represented by members or delegates, and most of them contributed specimens of their fruits to the exhibition. The attendance embraced nearly all the leading pomol-

ogists and horticulturists of the country, and the essays and discussions gave expression to the best thought of the age upon the subjects considered. The display of fruit was the most varied and extensive ever made in the country, and completely filled the two large exhibition rooms in Horticultural Hall. (A large portion of the fruit was generously donated by the proprietors for our own exhibition at Bangor, and has been previously noticed in that connection.) At the same time the Massachusetts Horticultural Society made a most elaborate and beautiful exhibition of flowers in Music Hall. Among the pleasing incidents connected with the meeting were the reception by His Honor Mayor Pierce, of Boston, a complimentary breakfast at the residence of Wm. Gray, jr., Esq., Boston Highlands, a visit to the celebrated villa of H. H. Hunnewell, Esq., at Wellesley, and the grand closing banquet at Music Hall. These unexpected attentions, combined with the interesting programme of the Society's meetings, made the occasion one long to be remembered by those who participated in it; and it is but just to express here, in behalf of each one of our delegates, their hearty individual concurrence in the unanimous expressions of grateful appreciation with which the session terminated.

OUR AIMS AND OBJECTS.

Opening address of Z. A. GILBERT, Esq., President of the Maine State Pomological Society, at its annual meeting, in Bangor, September 17th, 1873.

Among the many blessings daily enjoyed by us, and freely scattered abroad by an Almighty hand, we count, as of special importance, the fruits and flowers which are so profusely distributed on every hand. While they may not rank as first in importance in a list of necessities, they nevertheless are necessary, and supply a link, the importance of which can hardly be over-estimated.

The growing of fruit as a business, when pursued intelligently, earnestly, and perseveringly, is now, and ever has been, a profitable business. Not only can this truly be said of those who have thus followed it in other States, but here, among us, in our own State of Maine, those who have engaged in it for the purpose of realizing a profit therefrom have done that which those who are engaged in general farming, if we take their word for it, have failed to do. They have made the business pay.

The cultivation of fruit by the amateur—by those who plant trees and vines, tend and care for their growth and watch the development of the fruit, because they are irresistably drawn to it, because they cannot help it—is also remunerative. Although the compensation does not always come in the form realized by him who pursues it as a business, yet the reward is abundant and sure. Not only is he rewarded with an abundance of choice fruits for himself and his family and friends, but he is rewarded also by the enhanced value of his homestead when adorned by these surroundings, and also by the influence which the employment has upon the instincts of the heart, and upon the refinement, the taste, and the welfare of society around him. The employment has an elevating influence, felt not only by him who engages in it, but also by all who enjoy the increased beauty and attractiveness which that labor has created.

Recognizing the fact that fruit growing is of great importance among us—that it is a source of individual prosperity and of national wealth, and believing that it should be encouraged and promoted by organized effort, the friends of the cause conceived the idea of organizing a State Pomological Society. The history of its organization and of its progress thus far need not be here recounted, as it is familiar to you all. In its inception it received the encouragement of a goodly number of prominent fruit growers. It has also met with obstacles and with discouragements; but through them all its friends have persevered till we are enabled to meet this evening at this, the initial exhibition of the Maine State Pomological Society, to engage in exercises which it is hoped may be annually repeated for many years to come.

In designing and arranging this first exhibition of our society, and in drawing together the contributions of which it is composed, there have been many obstacles to overcome. It has required a deal of earnest work—more, quite likely, than will be required for subsequent exhibitions—and those duties, by your grace, were consigned to officers inexperienced in the work devolving upon them. We have had to feel our way through unknown paths. That mistakes have been made we know. The season has proved unpropitious. Hardly in the history of our State has there been a more unfavorable year for fruit. Following a year of almost unprecedented productiveness it could hardly have been expected that an average crop could be realized. Following this were the destructive and discouraging effects of the severe winter experi-

enced. Either alone would for the time dampen the ardor of fruit growers, but when combined tended still less to enthusiasm in our organization and its object. Then, as trouble is said never to come single handed, a severe gale blew off a large portion of the unprecedentedly small quantity of inferior fruit upon the trees. Under such conditions it has been far more difficult to awaken enthusiasm, and to draw together fruit growers and their fruit, than would have been the case in more favorable seasons. The results of our efforts in this direction are before you. While the contributions are neither so extensive nor so numerous as we could desire, and while the quality of many of the specimens is not up to the standard of highest excellence, yet it is believed you will pronounce the exhibition as a whole, under existing conditions, creditable to our infant society, if not an honor to the State.

While we are assembled at this inaugural meeting of our Society, it may be well to make a public statement of our aims and purposes. The organic act of the Legislature incorporated us a Society "for the promotion of fruit culture." While keeping our purpose ever in view, we are to search out the various methods by which the object aimed at is to be accomplished :

1st. *We must encourage more extensive planting.* Land devoted to the growing of fruit, especially apples and pears, is profitable beyond almost any other production to which it can be devoted. There is hardly a limit to which it may not be carried in our State. The demand for good winter apples, to the production of which our climate and soil are especially adapted, can never be over-supplied. Were the production increased a thousand fold, the demand would keep pace with the supply. With our present facilities for transportation to tide waters, the markets of the world are open to our product and invite to a greatly increased production. While New York was last fall shipping over a hundred thousand barrels a week, we had hardly enough to draw the attention of shippers or to create a market. And this in the face of the fact that we can produce as good shipping apples as any State in the Union. There are thousands of acres of land in almost every township in the State — good fruit lands — now of trifling value, which should be devoted exclusively to the production of fruit. They would be immensely enhanced in value and the wealth and prosperity of the State be correspondingly increased. Fruit growing requires no expensive machinery, does not exhaust the

soil, and pays far better than common mixed farming. Instead of here and there a small orchard, as is now the case, our hills should be waving billows of apple blossoms in spring time, and a golden sheen of ripened fruit in autumn, throughout the length and breadth of our State. Instead of this, it is doubtful whether we are now producing as many apples as were grown ten or twenty years since — certainly some of the best fruit growing sections are not producing as many. Is not here work for our Society?

It is being every year demonstrated that pears may be successfully and extensively grown in our State. With this delicious fruit there is no danger that the supply will ever equal the demand. While the production of the whole country has greatly increased in the last twenty years, the price obtained for them has also steadily increased.

2d. *We must induce a higher cultivation and thereby secure a better quality of fruit.* It is not enough that we plant extensively. The orchard must be well cared for. It is not enough that we grow fruit — we want choice fruit, desirable fruit — large and perfect. Neither is it enough to grow good fruit in fruitful years — we want good fruit, and we want it every year. This cannot be done without good cultivation. With that, in a great measure, it is secured. He who succeeds in producing even a moderate crop of marketable fruit in an unfruitful year, finds his net profits far greater than with even a bountiful crop in a fruitful year. As an encouragement to a higher cultivation, no more convincing argument can be presented than a comparison of prices now being received for choice fruit.

If we plant extensively, and make fruit growing a specialty, as we then should, we should be far more likely to give it the attention its success requires, than if it were mixed up with other farming in something like equal proportions, as is now too frequently the case. The success of those who have made fruit growing a specialty is a stronger and more convincing argument in its favor than any that can be here brought forward; and to such examples you are earnestly commended.

3d. *The introduction of new varieties.* There are many varieties of fruit now grown in our orchards and gardens which have proved hardy in our climate, and in many respects are valuable. Still there is room for others. Among pears and grapes there is need of much research. We need more early grapes of good

quality, if we can get them. We also need hardy, free growing, productive varieties of pears. Of apples, we have a good variety, of very satisfactory quality, of early and of autumn fruit. Of later keeping apples we need something different from what we have. The Baldwin fruit is satisfactory—the tree is productive, but has ever been pronounced tender in Maine by orchardists. Those who have not heeded the warnings of experience, and have planted it without regard to location, now have the ghostly branches of their dead trees pointing out their folly. The Roxbury Russet keeps well, but lacks quality, besides being whimsical about the soil from which it will make a bountiful crop. The Northern Spy keeps passably well, its quality is good, but it is so long after the trees are set before you have the privilege of testing its quality, that discouragements precede the fruit many years. We have nothing which can be fully recommended to fill the gap.

The whole world should be searched for a hardy, productive, late keeping apple for Maine. There are many kinds of native apples, which have proved of great local value, which should be introduced to notice, and tested in other localities than where they originated. It is not unreasonable to suppose that both at home and abroad new varieties may be found worthy of dissemination.

4th. *Nomenclature.* There is great confusion among fruit growers in relation to the names of the fruit grown. While one is describing by word of mouth, or in a communication to a public journal, a certain kind of fruit grown by himself, and descanting upon its merits and demerits, another is growing a very different kind under the same name. This confusion is not likely to abate of its own accord, as long as travelling agents fill an order for several different varieties from the same nursery row. This Society, by drawing specimens together at our exhibitions, will correct such errors,—the producers will learn the true names, and all future confusion will be avoided. A special committee is appointed, whose duty it is to correct all errors in nomenclature.

5th. *The meetings and exhibitions of the Society will afford an opportunity for fruit growers to meet together.* It is necessary for men engaged in a common business to meet together occasionally and compare views. They gain new ideas. The fruit grower, like the farmer, by meeting with those engaged in the same business, not only gains new ideas, but also gains enthusiasm and earnestness; he is aroused to higher efforts, and pursues his busi-

ness more intelligently. Without an organization of this kind few opportunities of comparing views are presented. It is the intention of this Society, not only to hold exhibitions, but also to hold meetings expressly for discussion, that the lessons of the past, learned from experience, may be gathered up and put in available form for our benefit in future years, and for the benefit of those who may follow after us.

While the name which we have chosen for our Society would indicate that Pomona's gifts are all we crave, we would not here convey the impression—nor does our exhibition show—that we are oblivious to the charms of fair Flora's smiles. While we would give the cultivation of fruit due prominence, we would at the same time encourage the cultivation of flowers. We recognize their mission in beautifying our homes, elevating our characters, refining our natures and leading us up to a higher, purer, and happier life. We can see evidence of the commendable work which the Bangor Horticultural Society has accomplished in this direction. Nor is the influence it has exerted confined to your own city; it widens and expands, like the ripple upon the glassy smoothness of the quiet lake, to the utmost borders of our State; it goes out with the emigrant to his Western home, where a plant in the window and a flower by the door tells of loved and cherished friends and dear associations left behind, but never to be forgotten. May flowers continue to bloom till their influence, sweet as the perfume they bear, shall reach all hearts.

I have thus briefly alluded to some of the work, towards the accomplishment of which it is the purpose of this Society to labor. There is much other work of equal importance which will not be referred to at this time. Enough has been alluded to to occupy the attention of the Society till another year shall again make it the duty of its executive head to address you. Let us go on, then, with strong hearts and an earnest purpose, in the laudable work we have thus, imperfectly it may be, commenced. Let us earnestly labor to develop the resources of this art, till our labors shall be rewarded by an increased production; till our real estate shall be enhanced in value from the fruits it bears, and the owners rendered prosperous and happy; till our homesteads shall be adorned and their inmates refined and elevated. Thus may we render service to ourselves, and benefit generations which come after us. And, while we individually and collectively labor for these ends, let us never lose sight of the fact that *our aim is to do good.*

ADDRESS OF HON. JOHN E. GODFREY,

Before the Maine State Pomological Society, at its Annual Meeting, at Bangor,
September 17th, 1873.

“It is a wonderful age!” This is a common remark. It has been a common remark, probably, in every generation since the commencement of civilization, perhaps since the creation of man. “It is a wonderful age!” said Adam, when after a long life of loneliness, he one morning awoke and beheld before him that fair creation from his rib, Eve. “It is a wonderful age!” said Eve, on opening her eyes after partaking of the fruit of the tree of knowledge of good and evil.

What makes an age wonderful? What is called its improvement—or, rather, its improved fruits, the choicest, best, most satisfactory products of the thought and labor of man and of the elaborations of nature.

It is with the latter that we have to do—the fruits of the earth most grateful to the palate of man. It is for their development and improvement; to make them more agreeable to the taste, consequently more profitable to the pocket and a credit and benefit to the State—in a word, to do something in this particular enterprise towards rendering the age “wonderful” in Maine, that this society has been organized

The science of pomology, though greatly advanced in some countries, has not received that full attention in Maine to which its importance entitles it. Indeed, it can hardly be said to have obtained much more than a foothold. Few persons have given their undivided attention to the culture and amelioration of fruits.

The truth is, that Maine has been loitering in this enterprise as it has been in almost every other, except the manufacture of lumber. The wealth supposed to exist in her forests has absorbed the attention of her people to the neglect of the enterprises which are at the foundation of the permanent prosperity of a State.

Why is it that Maine, with a territory as large as all New England beside, and with a soil more fertile, is so far behind the State of Massachusetts with a soil greatly inferior, with a territory not much larger than *one* of the counties of Maine and with a climate nearly the same? Is it because there is less intellectual vigor, less physical strength, less inventive genius? No, for go all over the United States—into Massachusetts even—and there may be

found men from Maine leading in many of the enterprises. It is a want of love for their father-land ; a want of patriotism ; an indisposition to make their native State their home and to assist in its elevation, and the too extensive prevalence of the impression that the State makes the man and not the man the State.

A wrong idea has been attached to the oft-repeated apothegm of the Great Author of Christianity, that a prophet hath not honor in his own country. As if every man were a prophet. It is a very difficult thing to believe that a person whom we have known all our lives is endowed with supernatural gifts, and we hold him in no honor when he exhibits them—call him a humbug, and refuse to credit it. But when a man grows up among us and does well what man is known to be capable of doing, who is industrious, attends to his own business and makes progress in the accumulation of knowledge or in the accumulation of wealth, or in eloquence, or gives to the world some new invention, or idea, by which his fellow men may be benefitted—possessing unquestioned integrity—the judgment is the other way ; he is, if possible, held in greater honor in his own country and among his own kin than elsewhere. It is the man who is honored, not the prophet.

Attracted by the golden charms of California, the agricultural promises of the West, or some other distant enchantment, and stimulated by the gorgeous representations of speculators, our young men, without seriously applying themselves to the effort of making their fortunes here, with the comfortable dwelling and the civilizing and christianizing school and church at their hand, shake off the dust of their feet against the homes of their boyhood and hasten to the lands of fever and ague, bowie-knives, revolvers, vagabonds and Modocs, dreaming of early fortunes,—and lying down in early graves.

One half the courage, ability and determination expended by the mass of the men who have emigrated from Maine into other lands, expended here, would have given the State a population, a name, a wealth, which would have rendered it second to hardly any State in the Union.

There was a time when there were great expectations of Maine, and if the policy and perseverance of her people had been equal to those of the people of Massachusetts, her progress would have been satisfactory and uninterrupted. But from causes unnecessary to detail here the growth of the State was checked until in the last decade it had actually retrograded. Every new generation

as soon as it arrived at maturity took to itself wings and flew out of it—as the Irish do out of their country—leaving the soil they should have cultivated, the resources they should have improved, the opportunities they should have enjoyed, to foreigners ignorant of our customs, satisfied with the way thus opened to them to improve their fortunes.*

What shall be done to stop this desolating hegira? What shall be done to inspire our young men with that patriotic ardor which will keep them within the bounds of their mother State? What to give meaning to the motto which our fathers honestly and proudly placed upon her escutcheon—*Dirigo*?

A new plan must be adopted in the education of our children. In the family and in the school they must be inspired with a love of their native State above that of every other. They must be taught that she has all that is necessary within her bounds to enable them to obtain all that is desirable in life—respectability, prosperity, wealth, happiness. And they must be taught how to apply the resources she possesses to this end—her natural resources—not those artificial resources which have come now to be resorted to by men fit only for very little things to get themselves into office—for it is certain that Maine has a fortune and honor for every one of her sons who tries honestly, earnestly and perseveringly to obtain them.

The establishment of this Pomological Society proposes a source of wealth and of reputation to a class of men that the State needs—of men whose intellects and tastes will enable them by study and experiment to determine the kinds of fruits adapted to the different localities; the qualities of the different soils, the manner of their treatment to secure the greatest productiveness; the amelioration of fruits; the improvement of the apple—that most valuable of all fruits—the pear, the plum, the grape, and the smaller fruits—all fruit, the successful growing of which the climate permits.

Every year the demand for fruits in the country is increasing; and the demand for the *best* qualities is such, that the remuneration for whatever pains and labor are expended in producing them is ample.

In order to the production of the best fruits, the different

* An intelligent citizen, residing in the easterly part of Penobscot county, says that the young men who have been reared in that region nearly all go West, and the Provincials come in and take their places, and “make a good thing of it.”

theories for their amelioration and propagation should be well understood.

If as much attention were paid to the cultivation of fruits in Maine as there is to the rearing of horses, the State would soon obtain an enviable reputation for the products of its orchards. But so long as it is merely an incidental industry, as egg-raising is, we must not look for much credit to the State in this direction.

Knowledge and skill are as requisite to the advantageous raising of fruits, as they are to success in any other business. Any person can set out a fruit tree, and the probability is that it will bear fruit if left to itself; but the greater probability is that the character of the fruit will not be satisfactory. There are in many towns in this State what are called orchards. Trees have been planted and left to take care of themselves. They bear fruit, but it is hardly deserving the name.

The person who assumes to be a pomologist, should be able to do something more than to plant a tree. He should understand enough of agricultural chemistry to be able to select the kinds of soil adapted to the raising of the different kinds of fruit. He should know how to select the proper site for his trees; to determine the depth of the soil, the manner of its preparation, the under-draining, and the kind of fertilizers it requires; how to make a proper selection of trees, and understand the manner in which they should be planted, and how they should be treated afterward; how to graft and bud and prune; how to shape the tree; how to avoid the black knot, the curculio, the caterpillar, the borer, and the insects that are dangerous to the fruit, and make himself acquainted with the proper times for transplanting and for pruning.

Then he should be able to determine whether it would not really be an object to raise his own trees, or at least to obtain for his purpose seedlings and grafted trees from his neighborhood, in preference to those raised at a great distance, especially in other States, and brought hither by hawkers who have no other object than to obtain his money.

It would seem that our people could retain the thousands of dollars that are annually expended for trees brought from New York and elsewhere, many of which are worthless, and the rest not so well adapted to our soil and climate as those of our own raising; and it should be one of the duties of this Society to impress upon our people the advantage of raising trees obtained

from nurseries upon their own land, or in their neighborhood; at least, from nurseries in the State; they would thereby not only cause more perfect fruit to be raised, but prevent much gross imposition, and save to many poor people their hard-earned dollars.

The pomologist who devotes himself to his profession, will not confine himself simply to the raising and improving fruits already at his hand; he will study to originate superior fruits.

A notable instance of devotion to the improvement of fruits is that of Professor Van Mons, at Louvain, Belgium, who gave a great portion of his life to experiments in this undertaking. The pear was his favorite fruit, and his success in producing new varieties of great excellence was very great.*

His practice was to take the seeds of the fruit of the best varieties of young trees—the fruit being gathered before it was fully ripe, and allowed to decay before the seeds were taken for planting—to select the finest seedlings when sufficiently matured to indicate their character, and from their fruit to take the seeds as before, and to select the most promising of the seedlings from these seeds, and continue this process uninterruptedly through five generations with the pear, four with the apple, three with the peach, plum, cherry and other stone fruits. He found that each succeeding generation came more quickly into bearing than the next preceding, and the fruit to be of greater excellence.

He said: "I have found this art to consist in regenerating, in a direct line of descent, and as rapidly as possible, an improving variety, taking care that there be no interval between the generations. To sow, to re-sow, to sow again, to sow perpetually, in short, to do nothing but sow, is the practice to be pursued, and which cannot be departed from; and, in short, this is the whole secret that I have employed."

He found that the seeds from old trees were valueless in the amelioration of fruits; the seedlings from them tending to the wild state.† From the seedlings raised from the seeds of young trees, whose luxuriance was subdued by the removal of the tap-root, and by the annual shortening of the leading side branches, he obtained his improved fruits—his seedlings being allowed to bear on their own roots.

At one time the nurseries of this enthusiastic pomologist contained no less than two thousand seedlings of merit.

* The Buerre Diei, De Louvain and Frederic of Wurtemberg pears, were originated by Van Mons.

† There are exceptions to this rule.

His theory of improvement by reproduction has been approved in this country, and the late Mr. Andrew J. Downing said that his own experience led him to believe, that by following Van Mons' process, fine fruit would be obtained in one or two generations.

Obtaining new varieties by cross-breeding is a favorite method with pomologists. It is understood, however, that this can be successful only with species that are nearly allied. The course to be pursued is detailed in the fruit books.

Experiments in cross-breeding and reproduction are not yet exhausted. From many that will occur to the pomologist favorable results will be obtained. Some years ago, Mr. Walker, a successful Massachusetts horticulturist, suggested that our fine American pears are from accidental seedlings—sometimes the results of a new soil and climate on the seedlings of an old variety, and sometimes the result of a cross betwixt two good varieties near to each other, and he proposed this experiment in order to obtain seed for the best summer, autumn and winter pears. Select two trees from each of three of the best varieties—the trees of each of these selections to be grown side by side, and the selections at least a quarter of a mile apart. For a new summer pear, he thought the Bloodgood and Williams' Bonchretien would be one good selection; for an autumn pear, the Seckel and Louise Bonne de Jersey, and for a winter pear, the Dix and Buerre d'Aremberg. The blossoms from the two trees standing side by side would fertilize each other, and the seed from the fruit would produce many seedlings from which the desired fruit would be obtained.

We have evidence with us, that Mr. Walker's suggestion that the accidental production of some of our best fruits is correct. The Eastern Belle pear, which was awarded a premium for its excellence by the Massachusetts Horticultural Society; the Indian Queen, another valuable pear; the McLaughlin and Penobscot plums, were all raised from chance seedlings and introduced by Mr. McLaughlin of Bangor, within a few years past.

The Goodale pear, introduced by Mr. Goodale in this State, the Dana Hovey and several other varieties of the pear, introduced by Mr. Dana of Massachusetts, it is said, are of similar origin.

The Baldwin apple was from a chance seedling discovered by Col. Loammi Baldwin, in Wilmington, Mass., when clearing a wood-lot. The tree was somewhat young and thrifty, but apparently in a dying state from the body having been quite thoroughly perforated by woodpeckers. He did not disturb it, and it lived

and the next autumn bore its delicious fruit, which he named the Pecker apple, and which he deemed so valuable that he grafted his trees with its scions, and thus gave the start to this famous fruit which is now so generally cultivated over the country.

The Rebecca grape was from a chance seedling found in the garden of Mr. E. M. Peake, of Hudson, New York, some twenty-five years ago.

Mr. Walker's plan for producing fine summer, autumn and winter pears, commended itself to Mr. Downing, who pronounced it "an easy mode for popular use."

Notwithstanding Maine has not the position as a fruit-raising State that she ought to possess, yet there has of late years been considerable attention given to the subject. The Reports of the Secretary of the Maine Board of Agriculture give evidence of this. In them there is occasional mention made of some model orchard; or of some enterprising fruit-grower who has set an example to be followed.

In the Report of 1867, Mr. Calvin Chamberlain refers to a "Mr. A."* who resided in one of the eastern counties—the son of a farmer—whose practical remarks upon the subject of fruit-raising led him to visit his orchard. He found a lot of seven acres filled with "apple and pear trees, well grown, and bending under enormous loads of fruit," every one of which had been planted and grafted by Mr. A.'s own hands. Impressed by the excellent appearance of the trees and fruit, Mr. Chamberlain was curious to know the secret of such success, and was informed by the proprietor, that it was attributable to constant thought and observation; that he had carefully read all the books upon orcharding, but derived little benefit from them for they were written with reference to other kinds of soil than his, which was naturally the meanest in the State, such as no author who regarded his reputation had been bold enough to consider capable of being cultivated for such a purpose. The soil was very thin, a coarse, loamy gravel, lying on a tight pan, inclined to clay and full of stones—say, about a hundred cords to the acre. The original growth was "small hemlock, tamarack, cedar, spruce, some pine, and occasionally a white maple with a hollow trunk." He cleared the land and underdrained it in 1854. From that year until 1860, in different

*I have been told that this was Hon. George P. Sewall, of Oldtown. That gentleman, in 1872, sold at his door three hundred barrels of apples taken from his orchard. He also manufactured five hogsheads of cider.

years, he planted his trees, making three experiments in the planting. The details of these experiments are too lengthy to be repeated here, but the result was, that by the year 1866 he had gathered, in one year, 150 bushels by hand, and had something over one hundred bushels of cider apples besides. The same land was under cultivation with barley and potatoes. He predicted, and perhaps by this time his prediction has been verified, that in a few years he would show a crop of a thousand bushels. In his experiments the gentleman tried about a hundred varieties of the apple, and threw away about fifty as valueless in his soil.

The discussions contained in the Secretary's Report of 1872, upon the subject of "Orchard and Fruit Culture," can be read by persons contemplating the cultivation of fruit in this State with pleasure and profit. They will there learn from the experience of one of our most successful orchardists what may be expected from an intelligent and careful attention to the pursuit.

"I have a pear orchard," says Mr. Perley, "which has been under cultivation ten years. The crops I have taken from it have paid all the expenses of cultivation, the expense of buying and planting the trees; and I have these trees as they now stand over and above the expense. I do not know what they are worth, but no one could induce me to cut them down for ten nor twenty dollars apiece. So, I say it is not all out-go. While you are cultivating your ground the ten years, you may have your pay as you go along."

There is everything to encourage fruit culturists in these discussions. Hints are given in regard to the various details to which I have referred, and those who have old, unthrifty orchards may there learn how to make them profitable.

There is one evil against which fruit-growers have to contend in this State, especially in the larger towns, to which it may be proper to allude. It is the propensity of boys, young and old, to steal and appropriate the choicest fruits to their own use. The annoyance, when going to gather some fine fruit, whose progress you have been daily watching with a view to its enjoyment, to find it gone, is well understood.

Proper instruction in the family and in the school, with an occasional and thorough application of the law to offenders, will do much to protect us from this annoyance. In many countries in Europe, fruit is as safe from depredation as other property. An American gentleman travelling in Prussia noticed a wisp of straw

attached to certain trees, and on inquiring of the coachman its meaning, was told that it was to protect the fruit from pilferers. The traveller expressed surprise, and remarked that from his experience the sign would serve to attract those pestilent people. The reply was, simply, "Have you no schools in America?"

Was the moral sentiment in regard to the property in growing fruit always so lax in this country as it is now? Some, who used to read in the venerated Noah Webster Spelling Book, the fable of the old man who found a rude boy upon one of his trees stealing apples, may recollect the effect of that lesson upon the juvenile mind and insist that it was not. Perhaps it was not. Would it not be well to introduce that excellent old rudimentary book into our schools again, and see if its lessons may not operate favorably to the protection of the fruit of the future?

Gentlemen of the Pomological Society and Fellow Citizens:—A bright future is in store for Maine,—croakers to the contrary notwithstanding. We may well believe this when we constantly see in our newspapers, items like the following:

"Fourteen years ago, B. F. Hughes went to Aroostook county with a few household goods and forty-five cents in money. He has now a farm of fifty-five acres of cleared land, good buildings, a young orchard, five cows, two horses, nineteen sheep, twenty acres of crops and eight children. Of course, he has no desire to go West."

Pains, pluck and perseverance accomplish everything. They made Massachusetts, they will make Maine. And when our young men learn, as they will, that her various branches of agricultural industry are sure roads to respectability and wealth—and that the intelligent proprietors of the soil are the leading men of the country—as they are in Europe, and, if not now, are destined to be in America—it will be a happy day for them and for her; they will not then turn their backs with contempt upon her broad acres, but will apply their best energies to their cultivation and development. And, when from the lines of railway extending from her eastern to her western border, from the river St. John on the north to the ocean, there shall be visible on either hand finely cultivated and fruit-garnished fields, the results of their labors and the admiration of the passing traveller, instead of the forests, stump wastes, bogs and desolate pasture grounds, that now prevail, the gratitude of a great and happy people will follow them, and enthusiastic souls will have some reason for the exclamation that they live in a "wonderful age."

PROCEEDINGS OF THE FRUIT GROWERS' CONVENTION

HELD IN CONNECTION WITH THE WINTER MEETING OF THE SOCIETY,
AT AUGUSTA, JANUARY 28TH AND 29TH, 1874.

FIRST DAY.

After a preliminary meeting of the Society, held pursuant to the vote of adjournment at Bangor, the Fruit Growers' Convention assembled in the Hall of the House of Representatives, the use of which had been kindly tendered by the House for that purpose, on the 28th day of January, 1874, at 2 o'clock, P. M.

The Convention was called to order by the President, Z. A. GILBERT, Esq., who said :

Gentlemen:—We have associated ourselves together for the purpose of promoting an interest which we believe needs the fostering care of those who are interested in it. Fruit-growing, we believe, may be made a profitable branch of productive industry in this State. We believe that it should be encouraged, and that by the encouragement of the friends of the Pomological Society, it may be vastly increased; and that, too, to the great advantage of all who are or may be engaged in it.

We claim that our State has a soil and climate peculiarly adapted to the production of certain kinds of fruit, which are in great demand in the markets of the world; and for this reason, if for no other, should we engage largely in their production.

In order to give the subject of fruit culture increased attention, and bring it more prominently before the people, our organization was instituted. It is believed that by organized effort, we can hold the matter up and turn it over to the view of the people of the State, and interest them in it more than has been done heretofore. This we shall endeavor to do. That is the object of our coming together on this occasion.

And in the first place, we desire our number of members largely increased. We need the assistance of all the leading fruit growers in the State. We want all of them to come forward and join our Society, and lend us a helping hand in the work which we have before us.

As an opening exercise of this meeting, let me say, we have chosen a subject which lies at the foundation of fruit growing.

The exercises will be opened by the reading of an essay, to be followed by discussion, open to all, whether members of the Society or not. The subject for our consideration this afternoon is, "Shall Maine grow her own fruit trees?" And I have the pleasure of introducing to you the Hon. S. L. Goodale of Saco, whom you all doubtless know is well qualified to discuss that subject.

MR. GOODALE came forward and addressed the Society as follows :

Gentlemen :—Before submitting to you the remarks which I propose to make on this occasion, I deem it proper to give a word of apology, and of explanation. When I accepted the invitation to be present at this time, I really supposed that I should have the time to prepare something that would be more worthy of your attention than I have ; but circumstances beyond my control have limited my time to a few hours—all I could possibly give to it. I wish also to say, inasmuch as the impression is abroad very generally that I am concerned in the business of raising and selling trees, and that the opinions which I have heretofore expressed in regard to the expediency of growing our own trees in this State in preference to buying them abroad, was influenced more or less by personal interest in the matter,—that it is some eight or ten years since I have grown trees in any way for sale, and for a series of years, I have had no interest in the business whatever, and do not expect to again.

MR. GOODALE then read the following paper :

ADDRESS OF HON. S. L. GOODALE.

"Shall the State of Maine grow her own Fruit Trees, or buy them from other States?"

For the purpose of this inquiry no attempt will be made to prove that fruit culture can be made profitable among us. This is assumed to be a point settled by the facts of experience. There was a time when it might have been doubted whether we were not too far North, or whether some other difficulties might not prevent. But results have sufficiently demonstrated that *good trees*, of varieties adapted to our conditions, planted in *suitable* soils, and cared for with as much skill and diligence as we give to other crops, will, in a series of years, yield satisfactory returns, and a larger net income than the average of other products which are extensively grown among us.

We assume that skill and attention and outlay are as requisite for success in fruit culture, as for success in other crops. We assume that without a soil and situation naturally favorable, success may *not* be expected. It is true that natural disadvantages may, in many cases, be overcome, by means adapted to the end, to an extent warranting the effort in a small way by those who estimate highly the gratification of raising fruit for home use, or as a diversion from the cares and labors of other business; but not to an extent warranting the investment of time, labor and capital in it *as a means of livelihood*. In such cases, pecuniary success cannot safely be counted upon—nor is it necessary that it should.

Assuming then that a suitable soil and a favorable location are selected, and that the needful time, labor and capital will be expended, what other conditions are requisite for success?

We may look for light upon this subject by examining it historically and rationally. And first let us inquire under what conditions has the highest degree of success hitherto been attained?

In looking at the history of fruit culture in Maine, we see that in its beginnings the young trees were raised *at home*—on the farm, or in the neighborhood. They were grown from seeds; and, as seedlings, they were exposed, during a number of years, to all the severities and vicissitudes of our seasons before they were planted out in orchards. During these years a considerable proportion of them, embracing all which possessed a feeble vitality or tender constitution, perished, leaving the hardier ones. They thus underwent a most thorough and effective sifting at the outset. They passed through an ordeal which only those possessing adaptation to the climate survived. We have here a practical illustration of “the survival of the fittest,” and of those alone.

Moreover, those hardy ones were planted out as seedlings, and as seedlings they grew to maturity; for at that period grafting was rarely practised. It was the exception rather than the rule. People were then content to use for eating and cooking the best of their natural fruit, and to consign the remainder to the hogs and to the cider mill.

In those days little was experienced of any of the troubles which in later years have affected fruit trees. Fruit was plenty—such as it was—and much cider came to be drank. When the temperance reform first opened the eyes of thoughtful people to the evils of an unlimited use of cider as a beverage, many saw no other way of staying the evil than to cut down the orchards, and down went

their trees. Others, more conservative, were content with less summary methods, and turned their attention to seeking fruit of finer quality, which they could sell for consumption as fruit, by engrafting their orchards with the finest varieties which they could find, selecting from a range far and wide. As a rule, these efforts, when conducted with any tolerable degree of skill and prudence, were remarkably successful. The trees continued to grow well, they soon came anew into bearing, and continued to bear freely for many years. This was the golden age of fruit culture in Maine. It was during this stage of progress that the Baldwin apple was introduced. *Grafted in this way*, it was *generally* found to be sufficiently hardy—and by degrees it was proved to possess such a combination of desirable qualities, strength, vigor and productiveness in the tree, fine appearance, good quality and late keeping in the fruit, that before very long it came to be esteemed as a general favorite, especially as a *profitable orchard fruit*.

We now approach another phase of experience in fruit culture. By degrees, as the orchards just referred to advanced toward old age, attention became turned to the setting out of new orchards. Naturally enough, these orchardists were desirous to have all their trees produce choice fruit, and, as a labor-saving measure, they adopted the plan of having the trees grafted, or budded, in the nursery while yet young. The success attending this method was less uniform.

The experience of the past forty or fifty years has taught us some lessons, and demonstrated some truths to which it will be well for us to give heed if we would have as good success in the future as has been experienced in the past. Among these may be mentioned:

1st. It has been shown by experience that the improved varieties of fruit, coming to us as they have from a large area of territory embracing diverse climates and soils, *are not alike* in regard to hardihood, vigor, productiveness and other essential qualities of the *tree*. We can judge of the worth of a fruit with comparative readiness and certainty; but whether the tree which produces that fruit is well fitted to our climate, whether it bears freely or scantily, whether it be permanently healthy and vigorous, or gradually shows signs of feebleness and sickness, can only be determined by a trial of years in different locations and aspects and soils.

2d. Experience has shown that some varieties of fruit grow vigorously and make well formed trees when grafted in the nursery, and that they continue to grow as well and bear as well when

planted out in orchards, as if they had been grafted into trees of good size, previously planted in the orchard. Among such may be named Red Astrachan, Northern Spy and Blue Pearmain—Winthrop Greening, Bellflower, &c.

3d. Experience has also shown that some varieties, such as Smokehouse, William's Favorite, Garden Royal, and others which are very desirable in respect to quality of fruit, when grafted in the nursery grow either so slowly or so feebly, or make so ill-formed a top, that nurserymen *will not propagate them*, both because they cost too much, and are unsaleable to all except the few who know how to appreciate them. Such trees often do well ultimately, after being planted in the orchard. If such varieties be grafted into grown trees in the orchard, however, well shaped and productive trees are sooner and more cheaply obtained.

4th. There are other varieties which, when grafted in the nursery, grow vigorously and make handsome trees of marketable size, but after planting out in the orchard grow less vigorously, and before long assume a partially stunted appearance. In order to be brief, I will mention only one class more. There are some kinds which possess decided points of merit, and would be exceedingly valuable and wholly unobjectionable were it not that they lack a *sufficient degree* of hardiness to enable them to endure our climate without injury for a series of years. These grow well when grafted in the nursery, and continue to grow well and to bear well after planting in orchards, *so long as the winters are not too severe*, or when planted in exceptionally favorable locations; but when a hard winter comes, in all except these favored locations they suffer severely.

As a general rule these half hardy or three-quarter hardy sorts may be grown successfully when grafted into established trees, and in no other way. As a notable instance of this class I name our best known and most generally popular winter apple, the Baldwin. This gained its reputation among us by being grafted into established trees; and proof is abundant throughout the length and breadth of the State that by no other method can it retain that position. There are undoubtedly those who will deny this, and point triumphantly to nursery grafted trees which have endured twenty or thirty successive winters without injury. That such instances exist is readily admitted. In some favorable locations I have seen hundreds of such, but if my own limited experience and tolerably wide observation furnish sufficient data to judge

from, it will be within the mark to say that for every one such instance of continued success, there have been a hundred where the nursery grafted Baldwin has failed to reach maturity; and this mistake has entailed great loss

Let us now look at our topic from another standpoint. Are nursery trees grown, budded or grafted in Maine any better for planting in this State than trees similarly grown at a distance of several hundred miles South or West from us? or in other words, is a tree which is *fully acclimated*, (as it is called) any better for us, *other things being equal*, than one which is not thus acclimated? This is a point on which opposite views are held. In my opinion there is a preference for the home grown over the foreign grown; but the choice — *other things being equal* — is less than many imagine. My belief is that any given variety possesses certain inherent qualities, such as vigor, hardihood, productiveness, or their opposites by virtue of endowments which inhered in the seed from which it sprang — from the beginning of that seed's existence — or, certainly, before it germinated, and that the accidents of place or climate where it did actually germinate and grow, neither add to nor subtract from those inherent endowments, but only affect their development. A cabbage seed and a turnip seed are not very unlike in outward appearance, but the former produces a cabbage plant instead of a turnip, not because of the peculiarities of place or climate where it grew, but by virtue of certain qualities which it possessed before it began to grow. If you plant an apple seed in this State of a naturally tender sort, it grows the first summer, but perishes the next winter. If that same seed had been planted in a mild climate it might have grown to maturity; but young trees grafted with that variety and brought hither and planted out, will soon demonstrate their inability to endure the rigors of a Maine winter. So, too, if the seed of a variety hardy enough to succeed perfectly here, was planted in Kentucky or Florida, it would also grow. The fact of its growing to a tree there proves nothing about its ability or inability to thrive in a colder or warmer climate. But let young trees grafted with that sort be brought hither, and the next winter would exhibit proof that they brought their powers of endurance with them.

Acclimation may, and doubtless does contribute somewhat to adaptation to climate, but it cannot confer powers of endurance where a substratum of the inherent property of hardiness is wanting. I do not, therefore, consider it a very serious objection to a

tree that it was grown in a soil and climate unlike our own, *provided*, that in other points it is unobjectionable.

But the phrase "other things being equal" means a great deal, and more than time will allow me here to state; but I will endeavor to state a part of it. To do this it will be necessary to show the different methods of practice in raising nursery trees which prevail here and in western New York, and generally further west.

In New England and the eastern part of New York, it is customary to plant seedlings of a year or two years old, in rows, and to bud or graft them after becoming established. By this method each tree possesses, as its capital to start upon in life, the whole vitality and strength of an entire new individual seedling. The vitality of an apple seedling centres at the crown—*i. e.*, at that part where the stem and roots join. From this as a centre, strong and supporting roots are sent forth and extend in all directions, pushing before them the leading rootlets; and such a plant only has the normal amount of vitality upon which to start in its career. The scion or bud should, in all cases, be either at or above the crown—never below it.

The foreign grown trees which are usually offered for sale in Maine, are grown in western New York. The prevailing and almost universal practice there is to propagate by what is called rootgrafting. There would be no objection to rootgrafting, *provided a whole seedling root was employed*—and but little if the extremities were considerably shortened, for, *the crown being retained*, the plant would be furnished anew.

But the practice there is such that only a portion of the trees have any crown at all, such as *nature* furnishes. Their method is, in the first place, to grow seedlings one year in deep, rich, friable soil, so as to secure, mainly, one single, long tap root. They are lifted in the fall, before enduring a single winter's trial in respect to hardiness, put in the cellar, and during winter when other work is slack, they are cut each into several lengths, and a scion spliced upon each and wound about with a bit of waxed paper. They are then packed in sand and kept till spring, when they are planted out with great rapidity. The sole object in adopting this method is to reduce the cost of growing them, by effecting a saving of time and labor, and by performing the work at a leisure time of the year rather than at the busy period.

To use a whole seedling with good branching roots for each tree would entirely defeat the object in view, since they would be so

bulky, require the handling of so much more earth to pack in, and also require more time to plant out, for as now made they are so small that thousands can be placed in a single box of moderate size.

So many of the trees thus propagated as are grafted upon crowns have a fair chance to make pretty good trees, but the probability decreases as lower portions of the root are used. The saving in cost of production by this method of propagation, over using whole seedling roots, may possibly be two or three cents each, or \$20 to \$30 per thousand. Whatever it be it is so much clear profit, and for this alone the practice is perseveringly persisted in. It is proper, however, to say that in the Middle States generally, this class of trees gives a much better degree of satisfaction than in either the far Eastern or the Northwestern States.

It is also true, and I am happy to state the fact, that "root-grafted trees" as now grown in western New York, are less objectionable than they were ten to fifteen years ago. Then the pieces of root used to graft upon were smaller than now, and they were not always cut from young trees; consequently, a larger proportion than now depended chiefly upon roots thrown out from the scions, and hence were little else than rooted cuttings.

This trivial saving in cost of production by the nursery tree grower is overwhelmingly counterbalanced by the loss of stability, productiveness and longevity experienced by the planter. *For his use*, the difference in value is diminished enormously, for the cost of planting and caring for a good tree is no more than for a poor one, nor does it occupy more land—while the good one gives a good income and proves a profitable investment, and the poor one proves a poor investment and does not yield profit, or does involve loss. A good one is cheaper at a larger price—even at ten times the ordinary price—than the poor one is as a gift.

To sum up the case briefly, we say that Maine should raise her own fruit trees in preference to buying from abroad. Because, in the first place, we can grow them as well as not, and save so much money which would otherwise go out.

2d. Because for the satisfactory production of a large number of desirable kinds, including some of the more popular and productive sorts, success can generally be attained *only* by planting in the orchard seedling trees to be grafted when of suitable size or age; and these seedlings, before being planted out, should be proved to be *sufficiently* hardy to endure our climate by having

endured, while in the nursery and during several years, all the rigors and vicissitudes of our climate.

3d. Because, in the case of such varieties as succeed well when grafted in the nursery, Maine grown trees have the advantage over others of being *acclimated*, be that advantage great or small.

4th. Because the trees sold here in competition with those of home growth, are almost universally propagated by a method which does not, and in the nature of the case, cannot, produce trees so well adapted to our needs as those which are grafted or budded upon a whole seedling root.

At the close of Mr. Goodale's address, the following paper by N. R. PIKE, Esq., of Winthrop, (who was unavoidably absent) was read by the Secretary :

The subject—"Shall Maine grow her own Fruit Trees?"—is one of much importance to the State, and it cannot be otherwise than that great good will arise from its discussion. I will not at this time notice the vast amount of money sent out of this State for trees, which might and should be kept in Maine, but will give a few of the many other reasons why Maine should grow her own trees.

Fifteen years experience in growing nursery stock in Maine, has demonstrated the fact to my satisfaction, that trees can be successfully grown in this State. And experience, I think, has also demonstrated the fact that we are far more successful with Maine grown trees than with those procured from other States. And we have reason to congratulate ourselves that light is breaking in this direction.

I will now notice some of the reasons referred to, why Maine grown trees are more likely to succeed with us than those from large establishments, situated in a milder climate, or under circumstances calculated to force trees in growth far beyond what our soil and climate will warrant. A tree or shoot making a free growth, is as much coarser celled than a moderately growing tree, as the growth is greater. All trees are made up of cells and cellular tissue, and it is obvious that the larger the cells, the less tissue there can be. Hence a forced tree, from whatever cause, has less solidity, is more spongy, and consequently more susceptible to injury from sudden changes of temperature than a fine celled, firm, hard wooded tree. Again, men who are extensively

engaged in the business of growing trees for a distant market, are not always particular to grow them with any reference to their being trees of lasting vigor, or well adapted to the locality for which they are designed. These trees are largely grown from seeds contained in pomace, which we all know comes of refuse apples, consisting of wind-falls or other unmarketable apples that may happen to come to hand.

That like has a tendency to produce like, is a law of nature; and to my mind it is as impossible to grow vigorous, well-developed, lasting trees from such seed, as to grow the best crops of corn or grain from immature or otherwise poor seed. Hence in planting a nursery, care should be taken not to select a location where, from any cause whatever, the trees will be forced to such an extent as to bring them into the same worthless condition as the most of those we have received from other States. It is all-important also that seeds should be selected from well-matured fruit, from hardy, upright, free-growing trees. Again, a large part of the trees brought into Maine are of the refuse stock left on the nurseryman's hands after selecting the most desirable trees for other markets. This worse than worthless stock is hawked about our State, and sold at prices often one hundred per cent. above that for which good Maine trees can be afforded. Consequently, many persons have not only lost their money, but their patience and their courage, and some have retired from the field disgusted, believing the time is past when fruit can be successfully grown in Maine.

Perhaps there is scarcely a greater agricultural interest in the State than fruit culture, and, at the same time, one so poorly managed or so little understood by the people; and I regret to say, one too, to which so little encouragement has been offered by the State. It appears to me that it would be but acting the part of wisdom for the present Legislature to place an appropriation in the hands of this Society for the especial purpose of promoting and encouraging so desirable objects as the growing of nursery stock and of disseminating light and knowledge among the people by means of premiums, prize essays, or any other way calculated to promote the advancement of that so much to be desired end. And I take the liberty to suggest the propriety of laying this matter before the Legislature for their consideration, and, I doubt not, their hearty coöperation with us in accomplishing so desirable an end.

The Secretary read a letter from Mr. Daniel Haines of Parkman (Somerset Co.), in which he says :

“ Having had some experience in the raising of apple trees, I send you a brief account of the same. In the fall of 1867, I sowed about one-eighth of an acre. Grafted them in the spring of 1869, when they were about one-third of an inch in diameter, cutting the stocks close to the ground. I let them stand in nursery rows two years, before transplanting, at which time they had attained an average growth of six feet. Of these trees I set two hundred and fifty for my own use, all of which are alive and several of them blossomed the last season ; also sold to other parties a considerable number, which also flourished finely.

“ In the fall of 1870, I sowed one acre more, and in 1871, three acres. Last spring I grafted nine thousand of those sown in 1870 ; and these made an average growth of three and a half feet the last season. The remainder, about seventy thousand, will be grafted the coming spring.

“ The ground on which these trees were grown had been in grass several years ; was plowed, and manured at the rate of ten cords new manure to the acre, and planted to potatoes. After the potatoes were harvested, it was plowed and harrowed and sown with apple pomace, in rows three and a half feet apart,—the trees standing about six inches apart in the rows. Great care has been used in obtaining the best scions.”

[The writer proceeds to speak of the failure of trees from abroad, citing examples, and urging substantially the same objections as those given in the preceding paper, and concludes as follows:] “ I would say that it is not necessary to buy *my* trees to be successful in raising an orchard ; but my experience and observation teach me that Maine trees are best adapted to Maine soil and climate.”

DISCUSSION OF THE SUBJECT.

THE PRESIDENT.—Gentlemen will bear in mind that it is not the purpose of this Society to make war upon “ New York trees,” by any means ; neither do we propose to be an advertising medium for nurserymen. The subject under consideration is “ Shall the State of Maine grow her own fruit trees, instead of purchasing them from abroad ? ”—and it is still open for discussion.

JOSEPH TAYLOR, of Belgrade :

I do not wish to be foremost in this matter, but if there are a few moments for me, I will avail myself of them. I have been in the habit, for many years, of raising fruit trees, and have had no experience in regard to foreign trees, because of having so good success with those of my own raising. I have seen, however, in my own neighborhood, the result of planting out foreign trees, and I have almost invariably found that it has been a failure. It is true, as has been said by Mr. Goodale, that it is sometimes the case that trees do succeed, when brought from a distance and planted here. But I have thought, and believe, from actual experience, that our own fruit trees are the most appropriate, and best adapted to our climate and soil.

While I was a boy, my father planted out several nurseries, and from those nurseries his children have availed themselves of much fruit. I remember that he planted a nursery, and quite early, after it came to suitable size, he set it out into orchards, and grafted into the tops of the trees after they had grown six or eight years, and they succeeded well. During my early years he planted out three nurseries, and those trees are now in a vigorous bearing condition; and from this fact I believe that we may raise our own trees here. I believe that we can raise better trees here than we can get from abroad.

I have let my trees remain in the nursery four or five years, and then set them out in my orchard, letting them grow a year or two more, and then grafting them in the tops—in the limbs, and I have succeeded in raising better apple trees in that way than by grafting them in the nursery. The body of the tree should have a sufficient growth, so that when grafted, the stock will be firm, and well rooted in the ground. I have one or two Baldwin trees that I grafted when they were quite young, but the hard winters have almost entirely killed the tops, and whenever I cut off a limb, the wood is found to be black.

HON. RUFUS PRINCE, of Turner, being called upon by the President, said :

I do not know that I have had enough experience in cultivating trees grown in other States, to give any opinion upon the subject. I have grown my own trees, but to say that it is better to raise our own trees, or that New York trees do not succeed, I cannot. I have a few New York trees which I purchased about fifteen years since, and I think they are as good trees as I ever had; but they

are of varieties said to succeed anywhere, particularly the Northern Spy. They have succeeded remarkably well. I commenced to raise trees from the seed when I was quite young, and have them now eight or ten inches in diameter. I have on my farm from six hundred to a thousand of such trees, and have grafted them in the limbs. I can say that I have succeeded as well as people generally, and perhaps better; and for the reason that I believe I have taken care of my trees. My idea is that it does not make so much difference where a tree is raised, if the wood is well ripened when it is set. I think a foreign tree will succeed as well as a native if the wood is well ripened. Still, I do not think trees that are pushed, as most of our Western trees are, can be as well ripened as those grown here. And for that reason, if I were to purchase trees, I should purchase from my own State. I would say if it was not for one drawback—the witch-grass [*Triticum repens*] on my farm, I would go into the nursery business. I believe there is no branch of farming that a man can engage in to-day and be so profitably remunerated as raising nursery trees, if he is situated so he can. Witch-grass is the greatest enemy our apple trees have, and I believe we cannot successfully grow them with a great amount of it in the soil. The borer is a great pest, but by going over them two or three times a year, I can get clear of that trouble, and I very seldom lose a tree.

W. P. ATHERTON, of Hallowell:

The question this afternoon is, "Shall Maine grow her own fruit trees?" and probably if the question was put to me point blank, I should say, "Yes, certainly, if she can." But the question also comes up, is she growing her own fruit trees to that extent which is demanded by the times? Probably in times past, Maine has produced a sufficient supply of fruit trees, either grafted or as seedlings, to supply the demand, whatever it was. But to-day I think the demand goes beyond the supply. We must remember that there are in this State seventy thousand farmers, of whom probably a very large majority are now more or less interested in fruit culture, and we must remember that when farmers want trees, they want from twenty-five to one hundred trees, good, sound and healthy, and of a certain age and height. When they want these trees, they want them at once, when the land is ready for them. Where shall they send their orders? Are there any places in Maine producing Maine grown trees in sufficient quantities to warrant these farmers in ordering that quantity? I take

it that there are not, consequently these farmers send their orders abroad. If seedling trees were all we wanted, we could readily obtain them in our own State, but most people are not willing to wait long enough for seedling trees to be transplanted and rooted, and afterwards grafted. They prefer those that are already grafted, and which after being transplanted, can become rooted and grow, and produce fruit sooner. Therefore, they send their orders to those who can supply them.

To the question, then, "Shall Maine grow her own fruit trees?" I say, "Yes, if she can." If our soil is adapted to it; if men have the time and capital, either individually or collectively, then let them do so, and if they can supply the demand, no money, I will venture to say, will go abroad for trees.

Mr. A. proceeded to state in detail his experience in the purchase and cultivation of New York trees. He has over four hundred of them, planted at different times within the last six years. Has been very successful with them; they were not, however, the root-grafted trees. Some of them had not proved true to name.

Hon. D. H. THING, of Mt. Vernon, made some very entertaining and instructive remarks, not particularly in reference to the point under discussion, but upon the vitality of our old seedling trees, and the want of it in nursery grown trees. In regard to the question under consideration, he thought so long as no reciprocity treaty was needed to enable them to purchase trees in New York, our farmers would do so, if they could get better trees there and at a cheaper rate than in our own State. He also spoke of the general failure of the western trees which had been planted in his own town, and concluded by saying, the only way for Maine nurserymen to sell their trees is to make them better, and make the people believe them better than others.

Mr. SAWYER. I understand it to be the object of this Society now, to make such recommendations to the people of this State as they may feel safe in following. The determination we give to the question before us, we expect to have some influence with the people of the State, else our work amounts to but little. It seems to me that we should consider well the question before us, and give it a right answer.

W. C. CROSBY, of Bangor. Thus far the discussion seems to have been, whether the State of Maine shall grow its own apple

trees? It has been confined to that one species of fruit. It seems to me that, notwithstanding all the arguments used in favor of going into other States, there are some reasons, which ought to be fairly considered, why the State of Maine should grow its own; it is said that a nurseryman who undertakes to supply the demand in this State, cannot find a market for them; that is, that he has not the same facilities for traveling over the State and canvassing every part of it which a New York man has, and there is some force in the argument. But it seems to me, so far as apple trees are concerned, that this Society might encourage what would be substantially a nursery in every town, not depending practically on one nursery in Kennebec County, and one in Cumberland County, to supply the whole State. I have seen something of that, where I thought the operation has been profitable both to the nurseryman and purchasers. There is this advantage about it; the farmer who wishes for fruit trees, will have an opportunity to observe what kind of soil the trees which he buys are raised upon. He will have an opportunity of examining them in the nursery. By comparing one tree with another, he will be able to see whether the tree which he thinks of buying is a thrifty tree, and he can determine at once. I believe there will be so many advantages, so obvious to all, that I need not dwell upon that particular point. Some years ago I set out an orchard. I went to a neighboring nursery, saw the trees there, took out what I wanted, and set them out. They were out of the ground a very few hours. I believe every one of them has succeeded well.

Mr. Crosby proceeded to urge the importance of the encouragement, by this Society, of the formation of town and district nurseries in our own State; by this means farmers can see for themselves the trees as they are growing, and can ascertain facts in regard to their hardiness and productiveness; and he thought the plan a very good one, and one that should be adopted — first as to apple trees and ultimately as to other kinds of trees. He also urged the importance of planting seeds from the best varieties, as influencing the character of the stocks, and thereby of the fruit grafted upon them, illustrating his remarks by a statement of his own experience.

HON. G. W. WOODMAN, of Portland. I do not understand that the question under discussion refers to apple trees alone, but rather that it embraces fruit trees of all kinds. It is the duty of this society to create an opinion about it, and to give tone, vitality

and health to the fruit growing interest of the State. I believe in the possibilities of Maine. Is there any doubt that Maine has the soil to grow her trees? Is there any doubt at all, that, as in other business, when we make it the interest of our people to buy their trees in Maine, they will do it? Is there any doubt of the ability of the people of Maine to find out what kind of trees we need, and to grow them? My idea is, that the moment we create this opinion, and see that trees grown here are the trees we want, there will be no trouble about selling them. Can you grow them profitably? Is not that the question? Is any citizen of Maine going to New York to buy a thousand trees, and pay more for them than for a thousand trees grown in Maine? We as a society should try to exert an influence here to induce the people to look at this question. I believe in the ability of Maine to do her manufacturing. Nature has done something for us in our water-powers, our harbors and our lands. We grow men and send them from Maine. We have the will to grow our own fruit trees, but, Mr. President, does not the question resolve itself to this; can we grow them at a profit? And when we satisfy the people that it is for their interest to grow them here, they will do it.

I am in the mercantile business, and I wish we could take all our merchandise right into our back doors at a less cost than to go from home for it; but we have to import some and to manufacture some, and to do what is for our interest.

I have done but little in the tree business. About twelve years ago I planted some New York trees, and they have done well; but I think the cultivation has had something to do with it. I believe we have the soil, the climate and the men, and can grow our trees just as well as any other State, and can grow them with profit.

Mr. ATHERTON. I wish to say that I believe we have as good soil for raising fruit trees as any other State, and I do not know but better; and that there is capital and enterprise enough in this State to raise our own trees. I wish to say again, that I am in favor of it, and would do all in my power to encourage it. But there are two things which we must consider; one is that our summers are short, and the other that our winters are long and severe. We must look at all sides of this question. What is the cause of the reported failures with imported trees? That must be taken into account.

In my own town there are parties who have purchased New York trees and have set them out and that is all, have given them

no further care; perhaps set them out in grass or pasture land where they have been neglected, and that is the cause of their failure. In other towns I have noticed New York trees, and have observed particularly the manner of their setting out and their cultivation, and I must say that wherever I have seen New York trees fail, it is from want of proper care and cultivation.

HON. WASHINGTON GILBERT, of Bath. It has seemed to me while the discussion has been going on, that there were certain matters which might be properly considered, and I beg a few moments indulgence. I do not understand the question to be whether we had better buy trees abroad, or can get enough at home, but "shall we grow our own trees?" and that seems to me to divide itself into two questions: First, whether we can grow our own nursery trees; because if we cannot, if that is an impossibility, or if the difficulties are so great that we cannot produce the trees at a cost which would leave a profit, we must stop there. And therefore, I had hoped to hear something in relation to the difficulties which are encountered by nurserymen.

The gentleman who opened the discussion has given us a general view with which I was much pleased, and has presented certain subjects suggestive of these matters of detail of which I expected we should hear something in the discussion which followed. Now I want to know whether there is anything besides witch-grass that constitutes an obstacle to the growth of good apple trees in the nursery in Maine? I think the gentleman who referred to that difficulty on his farm might have made his statement a little broader, and said that witch-grass is the greatest enemy that farmers encounter; and I would like to hear of some of the difficulties in regard to the borer in the nursery, and the breaking of trees by deep snows in the winter, and the depredations of mice.

Mr. Goodale, (and I understood our friend from Belgrade to entertain the same view), made some remarks tending to the conclusion that seedling trunks are superior to those grafted at the crown, and more likely to make perfect trees. That is to say, let the tree grow up and form a top, and then graft into the branches. I would like a little explanation on that point; also, whether there is not some difficulty in training up straight and good trunks from the seedling tree; because we see that when we plant an apple seed, the tree grows up a foot or more, or less, the first year, and sometimes there will be a soft spongy point at the top, which is

killed by the winter, and then there will be a number of branches thrown out all around, and perhaps at the very crown of the tree. I should like if they would explain to us how they manage in those cases to get a good, straight and solid trunk. Perhaps it can be done in all cases; but I would like to inquire if there are not difficulties about it?

If the question should be decided in the affirmative, that Maine can grow her own fruit trees,—and I believe she can,—then the next question is implied by some remarks made by the gentleman from Hallowell, (Mr. Atherton). And I do not understand the question to be raised whether we had better go without trees or buy abroad, but, does our soil and climate afford such advantages that we can profitably grow fruit trees, or can they be grown in the nursery at such a price as will induce the people to buy them, in preference to foreign trees? I have no practical experience of any consequence in regard to that matter, but I have some experience in regard to kindred subjects, and it would seem to me, from any estimate that I can make, that, unless there are very great obstacles in the way, nursery trees as good as those which we buy abroad, can be grown and sold here at a profit of ten cents each. I want to know what the drawbacks are which make it necessary for us to give thirty-five cents apiece for trees, and which discourage the farmers of Maine from going into the nursery business extensively, and supplying the entire home demand. The difficulty cannot be that there is not soil enough for the trees to stand on, because the nursery tree requires but four feet of ground, and the tree in the orchard requires four rods. And if we have not soil enough for the nurseries, where are we going to place the orchards? And I certainly think it must be true that the preparation of the ground for the orchard, and the necessary capital required, is greater than would be required for growing the trees in the nursery.

I would like to say one word in reference to what was said about the character of the tree being established in the seed. It seems to me there can be but one opinion in regard to that. Its essential character is fixed in the growing of the seed, and it is only the development of the seed that can be varied by culture, or by the after treatment of the tree. Then, if that is so, and if when the seed grows, the character and quality of the tree which that seed will produce is thus fixed, may it not be true that seedlings produced from seeds grown in any given climate, are more

likely to be adapted to the exigencies of that climate, than trees grown from seeds produced elsewhere? I would suggest one other idea in relation to the same matter. It is as important to have hardy roots as hardy trunks. If the roots and spongioles are tender, of course the tree is more easily destroyed by cold than one grown from another seed in which the organs have more hardness; consequently it is a more tender tree. So it seems to me that it is of importance where the seeds are grown.

II. N. ATHERTON, of Hallowell. I am a good deal interested in this discussion, and a good deal surprised to see so little faith manifested in regard to Maine grown fruit trees. To the question "Shall Maine grow her own fruit trees?" my brother has said, "yes, if she can." I say "yes," most emphatically, without any "if." I believe Maine to be just as capable of growing her own fruit trees as any other State; as capable of succeeding in this business as in any other. All that is necessary, it seems to me, is a proper knowledge of the subject, and sufficient force and energy. We (my brother and myself) have been in the habit of sending abroad for trees, not because of any decided preference for trees grown outside of the State, but more from force of circumstances and because we could not obtain them in sufficient numbers and variety at home.

THE PRESIDENT. In reference to the obstacles in the way of raising trees in Maine, will Mr. Varney, of Vassalboro', respond to the points referred to.

MR. VARNEY. I do not know that I am able to answer those questions to-day, or that I shall be for years to come. I suppose it is known, to some of you at least, that I am in the nursery business in a small way, and I have some of these drawbacks to meet with, and when the question comes up, "Shall Maine grow her own fruit trees?" it is to be answered, certainly with me, so far as experience goes, in the future. I could talk about tap roots and black hearts, and borers, if it was necessary. We have got our black roots and black tops from abroad, generally, and I think our borers were introduced from abroad, almost entirely, and we have those things to contend with, as they do in other places. I believe, however, with the gentleman from Portland, (Mr. Woodman) in the possibility of Maine being able to raise her own fruit trees, notwithstanding the drawbacks which have been referred to this afternoon. I believe in raising our trees at home. I believe they are better. I believe it can be done suc-

cessfully and with profit. That is what Maine demands,—Maine grown fruit trees.

MR. TAYLOR. I believe Maine *will* grow her own fruit trees. If it has been done, it can be done again. We have grown our own fruit trees, and I see no reason why we should not depend entirely upon the growth of our own fruit trees, especially our apple trees. As I have stated before, my father planted three nurseries more than sixty years ago, and when the trees grew up he set out many of them in his orchards, and furnished others to our neighbors; of the latter, many have been almost starved to death, broken down by cattle, or had their roots cut off by the plow. Yet many of them are now in a thrifty and bearing condition. My own trees are all thrifty, and are home grown, with the exception of an occasional tree which I have subscribed for of some particular kind that I wanted.

In regard to growing up a tree from the seed so that it shall be as straight as the growth of a scion inserted at the crown, I see no reason why it may not be done.

In planting nurseries, I think it is important, in this country, to plant them where the snow will not drift. Plant them where the snow and the air can have free course to pass through and among them, and, if possible, on the northern slope of a hill, instead of on the eastern or southern. I believe that trees grown on the north of elevated positions are better able to endure our cold winters than those grown on an easterly slope. I have not the slightest hesitation in saying that we can raise our own fruit trees, and ought to do it. I know that I have done it, and have had good success. I do not want to go to New York or any other place for my fruit trees when I can raise them myself.

MR. C. M. DAVIS, of Jefferson. I am not interested in the nursery business, although I am interested in a young orchard. I have no New York trees, but procure all my trees in this State. My neighbors have bought more or less foreign trees, and they have almost invariably failed, while mine have succeeded. I have about three hundred young trees which have been set out from six to eight years. Most of them are grafted, and they are thriving. I would not accept Western trees, for my own use, as a gift.

In regard to borers, I will say I have not been troubled by them. I have no doubt, as has been said, that they are brought here from abroad in young trees. I believe that we can raise our trees here, and that we ought to do it. We know they must be

better adapted to our soil and climate than those brought from abroad, and I am glad to see this Society organized, and using its influence to encourage our people to engage in the nursery business.

MR. J. D. DUDLEY, of Readfield. I came here this afternoon to hear this discussion and have been deeply interested in it, though somewhat surprised to hear gentlemen advocate the idea that we cannot raise our fruit trees here in Maine. To me, that does not seem reasonable, because it has been done, and what has been done can be done again, as has been said. I have never had much experience in orchards, but I have an orchard of young trees started, and I raised all the trees myself. I have raised several nurseries and have been successful. I have raised trees that made a growth of two or three feet the first year; the second year they were as large as whip stocks, when I set them out, and they all did well. I do not want to set out a tree that has grown five or six years and is stunted, but prefer to set a tree not over three years old and graft in the limbs. I have seen considerable of the New York trees, and from my observation (not experience) they are not worth the gift when we can get good State of Maine trees. The question has been raised here, whether we can grow trees at a profit. I have sold quite a lot of trees at ten cents each and I thought they paid me as well as raising stock or anything else, to sell.

THE PRESIDENT. There has been one statement made this afternoon to which I wish to call your attention. Probably it was not made intentionally, and that is that trees grown in the State of Maine cannot be purchased to any considerable extent. The impression will go out, if it is not corrected, that an order for 25 trees could not be filled in the State of Maine. I think we should hardly allow that to go out uncorrected. The general statement that our nurserymen could not supply the demand of the State of Maine at the present time is certainly correct; but still we have nurserymen who can readily fill orders for twenty-five or probably twenty-five hundred trees at a time, if called upon.

HON. HANNIBAL BELCHER, of Farmington, offered the following resolution, which was unanimously adopted, viz. :

Resolved, THAT MAINE CAN, AND OUGHT TO RAISE HER OWN FRUIT TREES.

Adjourned.

EVENING SESSION.

The Convention re-assembled at 7 p. m., Hon. Geo. W. Woodman, of Portland, Vice President, in the chair. The subject assigned for this evening was: "Orchard Culture," upon which the following paper was presented by Hon. Washington Gilbert, of Bath:

MANURE FOR ORCHARDS.

The sources of supply, and the theory and practice of its application, including the culture of the orchard, its operation and effect, and the profits of the orchard under high culture.

In the discussion of the subject assigned to me, I confine myself to the apple orchard. The peach being too tender for us, the little Turk, with his ever active sabre, persists in planting the crescent, the emblem of his ubiquitous power, everywhere upon the plum, until that delicious fruit has ceased to be of general interest to the people. Other fruits are too capricious and uncertain for general culture with us. But the hardy, the fragrant and salubrious apple, the fruit of varied and combined qualities and of more value and excellence than all other fruits together, is vouchsafed to us in Maine. If we can appreciate and rightly cherish the boon, in its golden harvests, and in its compass and variety of abounding utilities, an imperial fortune is proffered to the people of the State.

MAINE APPLES CONTRASTED WITH THOSE OF OTHER DISTRICTS.

It should be a primary object of this Society to teach the people the reasonable possibilities to be achieved in the culture of fruit. To do this it is necessary to teach them to comprehend their deficiencies and their wants. Conceit often usurps the office of observation and reason. And a prevalent conceit seems to have assumed that apples grown in Maine are superior to those of any other part of the country. The fallacy of this notion is but too painfully illustrated by the contrast exhibited, since the last harvest, between the apples of native production and those brought here from remote districts. While those from abroad equal, if they do not far surpass, those grown here, in all internal and essential qualities, the size, color and beauty of the former greatly excel those of the latter. A groundless assumption will not guide us to success. We should open our eyes to the truth.

And the undeniable fact is that we are near the northern border of the great apple-growing belt of the Atlantic side of the continent, and some portions of the State probably extend beyond that border. Our seasons are short, our summers cool. One of the effects of this condition of climate is, that many varieties of the apple, while they are diminished in size, and sometimes color more faintly, are yet more compact and crisp in their texture, and will keep longer than the same varieties grown in more genial latitudes. On the other hand I am obliged to testify, from personal knowledge, that while some of our most esteemed varieties grow larger and much better in West Virginia, and on both sides of the Missouri river, six and seven-degrees south of the latitude of Augusta, I have seen apples in Leavenworth in great abundance, perfectly sound, fresh and sprightly, in the month of April, and superior in size, texture and flavor to any usually grown here.

THE CAPACITY OF MAINE VINDICATED.

The question therefore meets us at the threshold, whether our soil and climate are such that we can produce apples in variety and abundance, and of the highest quality. For answer, I appeal to history. We know it was formerly done. It is now done on new soils. It is now done with skill and intelligent treatment by far too few on the old soils of the older parts of the State. It is doubtless true that the superiority of the apples of the other districts named, arises largely from the freshness of the soil. Another thing in their favor is a milder climate and longer summers. Again, in those new communities they have been always on inquiry for the best varieties, while we have been content to receive from our ancestors the sorts which they, in their limited means of discovery, were content to plant, without reaching forth for still better varieties. It is true, also, that in most if not all of those districts, there is a strong element of lime in the soil. On the other hand, much of our soil is disintegrated granite and other feldspatic rock abounding in potash; and although we may not easily produce apples of the size of the Twenty Ounce, the Big Romanite, and others of their types, yet countless examples demonstrate that we can grow apples of good size, good color, good flavor, and of all qualities suitable to all the many uses to which this fruit can be profitably applied.

WANT OF CULTURE THE CAUSE OF FAILURE AND DECAY.

This being so, however, it is undeniable that the culture of the apple with us has fallen into a deplorably disgraceful state of neglect and decay. And the pending question relates to the means of renovation, for the production of fruit in abundance and quality equal to those of the most favored districts.

To this end the requisite is skillful culture. And in the term *culture* I include, among other things, both the working of the soil and the application of manure. And in the term *manure* I include all materials used to give fertility to the soil. In the proper preparation and manipulation of the soil, and in the application of suitable agents of fertilization, in right quantity, time and manner, lies the condition of assured success.

To find suitable rules of practice, we must study the examples within the range of experience and observation. In this matter, induction, not founded on experiment, is wholly fallacious. But the lessons of past experiments are accessible to all who will seek them and who will open their eyes to their teachings. On the one side we have examples of small products of inferior fruit, proceeding from neglect and want of culture, to an overwhelming extent. In contrast with these, we know that the apple orchards of the first settlers were of rapid growth, hardy, strong and productive. They were planted upon virgin soils, naturally charged with elements for growth of wood and fruit. Added to this were large quantities of potash disengaged by the burning of the forests.

The same state of things is still found on new lands in different parts of the State. There we find the apple-tree thriving and bearing in beauty and abundance. But young orchards, planted on old lands without careful preparation, rarely afford any satisfaction. In numberless instances they are planted but to dwindle and die; while full grown orchards, once flourishing and productive, having remained long years without culture, have become decrepit, nearly or quite barren, and wholly unprofitable,—a shame and disgrace to the proprietors and to the country.

The causes are obvious. The nitrogen resulting from the decay of the organic matter of the primeval forest, the potash and phosphate of lime, have been so much diminished that the trees have no longer sufficient sustenance. The soil so long undisturbed, has become compact, and mainly closed against the necessary influence of atmospheric action. And the tree, like an imprisoned bird left

to starve in its cage, is dying from hunger. Of course the fruit wholly disappears, or diminishes in quantity and degenerates in quality. Here, then, we have the known causes of decrepitude and decay.

EFFECTS OF CULTURE ILLUSTRATED BY EXAMPLES.

On the other hand, the past history of orchard culture affords to the careful observer sufficient instruction to insure success by the employment of suitable means.

There may be many present who, as I have, may have seen the fruit of a neglected apple tree doubled in size, trebled in quantity and probably quadrupled in value, simply by the aid of swine working the soil.

Many years ago I was acquainted with an orchard which had been well planted and carefully reared. In the days of its youth it yielded goodly fruit in abundance. But being left for a long period in grass, without manure, it had passed into the condition usually seen in such cases,—the foliage feeble, thin and pallid, the smooth bark of the twigs and branchlets without lustre, branches dying from year to year, fruit small and scanty. At length one half of the orchard was plowed in the spring and planted, with little or no manure.

The first time that I saw this orchard after this new culture, I had a view of it from the top of a high hill two miles distant, at the end of summer. The change was striking. The newly cultivated part had put on a rank and lively green, while the residue still presented that well known faint, fading and languishing aspect usually seen under such circumstances.

Instances like these show the effect which the working of the soil long uncultivated has upon the health and vigor of the tree. We may refer to the common experience to prove that it is for a time highly useful merely to work the soil without fertilizers of any sort. This arises in part from the evolution of native elements by atmospheric action. But this effect will soon subside, and to make the most of the capacity of the tree, in our soil, manure must be applied. Its immediate effects, though matter of general experience, may be illustrated by a few suggestions.

We have sometimes seen an apple tree which had long been left to stand and die a lingering death, resuming its life upon one side by reason of the casual application of some fertilizer upon that side only. The sink spout of the new kitchen, or the out-house of a railway station is so placed that fertilizing material is dis-

charged upon the lower side of a tree standing on a slope ; a new drain from a public road, or from rich lands above, is so arranged that water is thrown upon the soil of one side, and does not reach the roots of the other side. The soil on one side is newly cultivated and dressed, while the other side of a languishing tree is still neglected. In all these cases we have observed that the favored side starts into new vigor, while the other side continues to languish and decay. And when it happens that any of these influences are casually or designedly brought to bear upon all sides, then we observe the effect upon all parts of the tree. New shoots spring forth ; a vigorous growth of trunk and branches recommences ; the leaves are greatly enlarged in area and thickness and deepened in color. Fruit, abounding and greatly improved, is the result. Such is the effect of food and culture upon the famished tree, that even very aged trees, — those often more than a hundred years old, — those which have outlived three or four generations of men, bowed and gnarled, and full of holes where once branches, now decayed, joined the parent stem, are made to put forth new wood and to yield grateful fruit to the people of a new century.

These things may seem common and trite. They are so. They are so common, and therefore have become so trite, that we cease to regard the lessons which they teach. The very existence, on all sides, of the facts whence these illustrations are drawn, proves the need of presenting them again and again.

HISTORY OF REMARKABLE TREES.

The true economy of orchard culture is further and better demonstrated by another class of examples.

The cases of great yields, though far too few, are yet many. To the history of such trees we should go to learn the best management of the orchard. It is believed that all these distinguished trees have had the benefit of a favorable quality and condition of soil, as well as peculiar advantages in the constant application of fertilizers in limited and yet sufficient quantity. A glance at a few of these trees will afford useful instruction.

I well remember, in the season of my boyhood, two apple-trees on the farm of Mr. Benjamin Alden, in Greene, of great bearing capacity. Some years they bore forty bushels each. One of them stood near the roadside on a gentle slope, where the water from

the road flowed over the surface. The blacksmith's shop standing near in the earlier years of the tree, had attracted to itself many people with their teams. And the farm stock and teams necessarily were much in the road near the tree. There had been no cultivation of the ground since my recollection. The tree had ample space unoccupied on all sides.

The other one of these remarkable trees stood on the south side of an orchard near the northern border of a rich, highly cultivated kitchen garden. It was surrounded by other trees on three sides, and on those three sides the ground was, and for a long time had been, in grass. The soil of both was a fine, brownish loam, neither very wet nor very dry.

I have investigated the history of two remarkable trees mentioned in the *Maine Farmer* in the autumn of 1872, the one of Mr. Watson Reynolds of Lubec, the other of Mr. J. C. Chadbourne of Waterboro'.

Mr. Reynolds' tree is sixty years old, the trunk is two feet in diameter, and six feet in height below the limbs. The top covers a circle about thirty-five feet in diameter. It stands in an open field of good grass land. The ground occupied by the tree was formerly a garden. The grass around the tree is never mowed. Every autumn the tree is banked two feet deep with chip dirt, which the hens are allowed to scratch about every spring. It is a seedling, a constant bearer. For twenty-four years previous to the last it had never yielded less than four barrels; the highest yield, ten barrels,—average, eight barrels.

I deeply regret that I have lost the letter of Mr. Chadbourne and forgotten his address. I state from recollection. Mr. Chadbourne's tree also stands in open ground. It is a Rhode Island Greening. It is thirty-eight years old. The extent of the top is somewhat larger than that of the Reynolds tree. The soil is now uncultivated. But the tree stands near the border of a swale, which runs down from the barn-yard. In 1872 the tree bore forty bushels of apples, besides the windfalls estimated at ten bushels. It has been a great bearer for many years, but I am unable to state the product in detail.

But the most remarkable tree among us, so far as I have been able to learn, is a tree of the variety called the *Sarah*. This variety originated in Wilton sixty years ago and upwards. The parent tree is still living. The distinguished individual of the variety is a sprout of the parent, now standing in the orchard of Mr.

Enoch Wood, about a mile from East Wilton village, supposed to be about forty years old. For the history and character of this wonderful tree I am indebted to the kindness of C. J. Talbot, Esq., of Wilton, who at my suggestion has obtained full details.

"The tree," he says, "stands on rocky upland, of a strong, deep and rich soil, exactly adapted to the growth and proper development of apple trees," on the southerly side of the dwelling house, between the house and the public road, about twenty feet from the house. Between the house and the tree is a bank wall about three feet deep, filled in with earth on the side of the house, which stands on ground higher than the tree. The early treatment of the tree is not stated. But Mr. Wood has been in the habit of banking his house in the fall, sometimes with dirt from the roadside, and sometimes with chip-dirt; in the spring he scrapes the banking with a hoe off the bank wall towards and sometimes around the tree. The tree is in a thrifty condition. About two and a half feet from the ground it branches into five main branches, and again into fifteen branches about seven feet from the ground. And the top fills a circle three rods, or fifty feet in diameter. Roots of the tree an inch in diameter are found in the cellar of the house. Mr. Wood, the present proprietor, has gathered the fruit for the past nineteen years, "and in no year," says Mr. Talbot's letter, "has it been less than twenty bushels. In 1869, he gathered from it sixty-five bushels. The average yield is about forty bushels." It is a constant bearer. Mr. Wood has refused \$200 for the tree, as well he might. The fruit is large and good and ripens at the end of summer.

Cole tells us of an apple tree on the farm of Mr. Eames in Natick, Mass., seen by himself, which was grafted to the Porter when seventy-five years old, and the seventh year afterwards bore fifteen barrels of apples. The original Hurlbut tree, he tells us, bore forty bushels one year and twenty the next, and the original Bars apple bore sixty bushels one year. But I know of no apple tree now in fruit among us which has ever surpassed the yield of Mr. Wood's tree. A few pear trees and a few apple trees of early times have surpassed it. Among the former is the famous pear tree at Vincennes, Ind., which in 1834, bore one hundred and eighty-four bushels of fruit, and in 1840, one hundred and forty bushels. And the same author mentions a Havard pear tree, belonging to Mr. Wyeth of Cambridge, which bore nine barrels of fruit.

What had been the culture of those trees we are not informed. But we may safely assume that it was not a slipshod method of starvation which enabled them to demonstrate the possible achievements of their several kinds.

LIKE PRODUCES LIKE.

Now, in reference to the cases cited it is to be observed, that these trees are in no sense accidents. They are the products of natural causes. Like causes produce like effects. And if we wish to produce trees which will yield eight, twelve, fourteen or twenty-three barrels of merchantable apples, we must learn the art from these teachings of nature. These extraordinary trees, which have been particularly described, all had certain conditions alike; they all had open ground around them. In all cases, either their roots had access to a constant supply of nutriment in medium quantity from casual sources, or direct applications of manure to the soil were made from year to year, and from one cause or another the trees had a well fed youth, as well as continuous supply during their subsequent years. And in all the cases the soil had been at some time worked. In the case of the Sarah, it is probable that its roots sport at large in the artificial soil between the house and itself, and that it thence derives much of its support and vigor; and roots an inch in diameter descend to and enter the bottom of the cellar, seven yards distant. They are there seeking the nitre, which always gathers in the earth under buildings where there is no water to wash it away.

It will perhaps be said that although these trees are not accidents, they are yet extremes, and that it is not possible to bring a whole orchard up to that degree of productive capacity. Perhaps so, but a medium result affords inducement enough, and to show what can well be done, three cases, lately reported, may be cited.

THE CASE ILLUSTRATED BY RECENT EXAMPLES.

The American Rural Home, as quoted by the N. Y. Tribune, reports a visit to the orchard of Mr. B. B. Conable, near Warsaw village. It contains just one acre and yields annually from 100 to 200 barrels of merchantable apples. The trees are large and trimmed high and kept free from sprouts. The ground has been for many years in grass, but has received annual dressings of barn yard manure. The New York apple-barrel is two bushels and a half.

The Editor of the *Maine Farmer*, of November 22, 1873, reports the product of the orchard of Mr. L. P. Fisher, at Woodstock, N. B., as two hundred and ten barrels the last season. The orchard contains just two acres. It is stated that the land was at first tasked with other crops a few years, but not latterly. It appears that the ground is well cultivated mechanically, but what manure, if any, it receives, is not stated.

Prof. J. W. Beal, of the Michigan Agricultural College, Chairman of the Fruit Committee of the State Pomological Society to examine orchards and gardens, among other things reports the apple orchards of Mr. H. L. Bailey, of South Haven. The soil is a deep gravelly loam. This he has heavily manured and plowed every year, generally taking off a crop of corn, wheat, oats or potatoes, as well as a bountiful harvest of apples. Occasionally he seeds down, but plows the grass under as soon as it makes a good growth. The orchard is fifteen years old. Of the past season's yield the chairman says: "Such a bountiful crop of fine apples is rarely seen East or West, in Michigan or out of it. The trees would run from about nine to fourteen barrels of fruit to the tree, all nicely colored on account of the open heads of the trees." An average between the highest and the lowest would be eleven barrels and a half.

Cole relates a case also in point. Mr. Moses Jones, of Brookline, he says, planted one hundred and twelve apple trees two rods apart, and peach trees between both ways. The eighth year he had from the trees two hundred and twenty-eight barrels of apples — a trifle over two barrels to the tree; and the tenth year many of the trees produced four or five barrels each. During all this time the land was yielding good crops of vegetables, and manure was used.

THE LESSONS DEDUCED.

Such as these are the lessons for our guide. And thus taught, and by the aid of familiar principles, we may learn how to take sound and well grown trees from the nursery and rear them, and so to supply their wants, that we may make of them sound, robust and productive trees in bearing.

The first, and an indispensable step, is to give the tree a start of healthful and vigorous, but not excessive growth. Ground previously cultivated and dressed, and thus put in good condition

to yield a good crop of corn, is doubtless in best condition for the infant plantation. Frequent supplies of manure must be added in quantity sufficient to produce a constant growth. The young shoots must be strong and luxuriant, but the growth must not be so rank that it fails to ripen perfectly before winter. The new shoots and twigs must perfect their terminal buds every autumn so early that the tree will ordinarily cast its leaves on the approach of freezing weather. If the cultivator finds the growth is so luxuriant that the wood does not mature and harden, he must stay his hand. He must remove the tender and damaged wood in March, and apply no more manure until he again finds the terminal buds annually perfected. Then renew the applications in judicious quantity. And in all rich orchard lands, cultivation after mid-summer should be avoided.

THE SUPPLY OF MANURE FOR THE ORCHARD CONSIDERED.

This brings us face to face with the question of the supply of manure for the orchard. And as this essay does not afford space for a discussion as to the most fit manures for the orchard, it may be said in short that the materials and the sources whence they are to be drawn, and the ways and means, are the same as those for other uses of the farm. But while these sources are constantly open to the opulent, to the common farmer the means of acquisition is the difficult problem. The capitalist who would plant an orchard has only to consider in what suitable kinds of manure he can make the most profitable investment. But to the common farmer of small means, of limited credit, who shrinks with dread from contracting debts to be charged upon the fruits of future industry and enterprize, encounters the formidable question how he can make the outlay necessary to procure the manure required to sustain the orchard until the returns of fruit come in, without diminishing the supply for his annual crops. After fruit appears all is easy. The storehouses of the world open their doors at the touch of gold; and the grown tree affords an important amount of manure in its annual product of leaves. But in the mean time he must have his annual crops to meet his annual wants. And the planting of an orchard is an investment of capital for future profit.

To provide a surplus of manure, therefore, above the ordinary results of the common operations of the farm, by methods which

yield a speedy return for any unusual outlay required for the purpose, is the fundamental problem to be solved. Upon its solution hangs the practicability of an extensive and profitable planting of fruits by the common farmer. And if this Society is to achieve a worthy success, we must grapple with the problem and solve it. And we must enforce the solution with energy and diligence, by line upon line, precept upon precept, and by cogent example often repeated. We must not only teach the method, but we must go and do it.

In that, which is about to follow, there is nothing new but the application. To combine and apply what is known to the subject in hand is all that will be attempted here. That the ordinary product of manure yielded by the operations of the farm may be very largely augmented by the judicious consumption of purchased materials, and by greater care in the preservation of liquids and solids, does not admit of a doubt. This involves an outlay of money for the purchase of commercial manures, or other available fertilizers, for the culture of crops suitable for forage, and for the purchase of corn, oil-meal, cotton seed, or other materials of like nature.

To him, therefore, who has no courage to step out of a beaten path, however rough and toilsome, or even to tread a beaten path with alacrity, nor capacity to compute and forecast results, nor energy and perseverance to pursue a formed project to the end, little can be said. But to him who has all these, the way is open. Modern art and enterprise have provided means of transportation, bringing remote districts into close and easy connection. And while the soils of the great West are so exuberant that the manure of the stables is deemed a cumbersome nuisance, the corn of the Western farmer may be consumed upon our farms, first for profitable forage, and then to replenish our grounds and make them abound in fatness. Science and experiment concur in declaring Indian corn the best grain for fattening. And an eager market awaits all future products of the orchard.

PROFITABLE PRODUCTION OF MANURE FROM CORN AND OILMEAL.

The statute bushel of corn is fifty-six pounds. In a ton of corn, therefore, there are about thirty-six bushels. Corn should be purchased by our farmers in large quantities, at favorable periods in the hands of producers, or first hands at least. We must soon

have a fair system of carriage from the West to the Atlantic seaboard; and when we have that, corn should be purchased and brought to any station west of the Penobscot at a cost not exceeding seventy cents a bushel, and thence down to fifty cents. Corn at 70 cents is twenty-five dollars a ton.

Now suppose the farmer in the autumn buys, at eight cents a pound, unfatted steers weighing eight hundred pounds each. They are fed twenty weeks, each consuming a ton of hay and twenty bushels of corn, and each gain two hundred pounds.

Call the value of the hay	\$12 00
The value of the corn at 70 cents is.....	14 00
Forage consumed by each	<u>\$26 00</u>

The improved condition enhances the price, and the steers are now sold at ten cents a pound.

Mr. Lawes of England, analyzed and experimented extensively to ascertain the comparative value of manures from the consumption of different kinds of food. His estimates of actual value probably approximate an accurate estimate of values with us. According to him the value of the manure resulting from the hay consumed is. \$6 43
That for the corn 3 72

Aggregate value.....	<u>\$10 15</u>
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The account then gives these results for a single animal:

Cost of steer, 800 pounds at 8 cents.....	\$64 00
Cost of forage consumed.....	26 00
Whole cost of fatted steer	<u>\$90 00</u>
Steer sold, 1,000 pounds at 10 cents	\$100 00
Manure as above	10 15
Balance of returns above cost	<u>\$110 15</u>
	\$20 15

To state economical results, the farmer is fully paid for his labor and materials by the sales, and has the manure for clear profit above all. In other words, the manure, ready to be removed to the field, has cost him nothing.

These hypothetical illustrations may be varied to adapt them to all fluctuations and contingencies, and to the use of various other kinds of forage, disclosing, under varying conditions, a range of profits running down from \$40 or \$50 on a steer, to nothing. But

it is believed that with ordinary skill he could rarely fail, if ever, to obtain a reimbursement of his cash outlay from his sales. And if he obtains no more than this, he still has the manure to compensate him for his labor and care.

It is still further to be remarked, that the estimates before quoted give the value of the manure from a ton of linseed cake consumed, at \$19.72; and that from decorticated cotton-seed cake at \$27.86.

If, then, a mixture of either or both of these materials with corn meal is used, in the proportion of two parts of the latter to one of either of the former, there would be an increase in the value of the manure produced, varying from four to seven dollars to each steer fatted. Such a mixture as this Prof. Voelker is reported to advise as more fit for fattening in the winter than unmixed corn. The mixture contains nearly the same nutritive value as unmixed corn meal.

But we shall be told that, in spite of theoretical and speculative estimates, in practice it is unprofitable to fatten beeves for the market. Let the objector demonstrate his assertion. The extensive experiments of the former Duke of Bedford, made under the direction of Messrs. Lawes and Gilbert, two scientific gentlemen deeply skilled in such matters, fully justify the view here taken. And for further support a confident appeal is made to the proof of observation, since we find that those farmers of the greatest thrift, and those who best realize that "muck is the mother of the meal-chest," are those who intelligently consume the greatest amount of forage in fattening.

The practice is verified by very many of the best farmers in the country. And when we contrast present prices and facilities with those of former times, and remember that farmers then gained a competence and even wealth by raising and fattening cattle, it would seem that the grumbler of the present day ought to be silent for shame.

Assuming then that the farmer may fill his receptacles with the most valuable manure, ordinarily without cost, and rarely if ever at a cost of anything but labor, which he can well afford to bestow, we may advance a step.

PROFITS OF CULTURE OF MANGEL WURZELS IN THE YOUNG ORCHARD.

Suppose that he has a young orchard planted upon tillage land, which requires an annual dressing to keep the trees along and make them what it has been shown they ought to be. He has this

supply. We may safely assume that he can with profit add a quantity of the Cumberland superphosphate of lime, or that of some other good manufacture. It is believed that this is one of the best of all manures for the orchard. For beets add also eight bushels of salt to the acre. By the use of this manure, with the adjunct of superphosphate, he can, upon every acre of his orchard, easily produce a thousand bushels of Mangel Wurzel. This is a good medium crop, or their equivalent in nutritive value of sugar beets. No crop is more sure, or more easy to manage, as it has few superiors in value as a green forage crop.

By the estimate of Mr. Lawes, based on the same experiments before cited, a thousand bushels of Mangel Wurzel are equivalent to eight tons of English hay. Moreover, the Mangel Wurzel produces an enormous growth of leaves, which by analysis and practical experience are proved to be of great value as forage — Prof. Wilson says, of three times the value of the roots, “as a feeding and manuring substance.” This may, however, be an over-estimate. And unless the crop is to be in part consumed in the autumn, as it should be, it is not practicable to make the leaves available to much extent, as forage, although as manure, the full value may be easily realized.

Adopting the same estimates as before, the manure resulting from the consumption of thirty tons, or one thousand bushels, of the roots, is worth \$32.10. Then if Prof. Wilson’s estimate of the manurial value of the leaves is correct, the manure from the leaves consumed or unconsumed by cattle, would be worth \$96.30 for the acre of leaves, making the manurial product of an acre of beets of the value of \$128.40.

But to avoid the hazard of extremes, let us suppose the leaves to be only of equal value with the roots for forage or manure.

Suppose, also, that the farmer, by early feeding, can manage to make half the leaves available as forage for fattening beef and mutton, and for dairy cows. Then we have upon every acre a crop of roots and leaves capable of yielding forage equivalent to twelve tons of the best hay, and a product of manure of the value of \$64.20.

One half of the strength of the fertilizers used for the crop has been taken up by the growing trees or remains in the soil for their future support. For the other half consumed by the crop, and for all the labor upon the acre of beets, the crop, equivalent to twelve tons of hay or two hundred and eighty bushels of corn, and equal

to the entire hay product of a small farm, is a four-fold compensation.

Thus, then, the orchardist has provided for the wants of his growing orchard. This provision has cost him nothing, because the crop at the same time secured, has over-paid the whole outlay. And better still, he now has in hand material, not only to meet the following years' demands of the orchard upon the commissary, but a surplus to be devoted to other crops, or to the culture of new plantations.

And this process, either with or without rotation or variation, may be continued for a series of years, and without difficulty may be made to carry the orchard along until it becomes productive. And if we abate the product one-fourth, thus bringing the result within the easy attainment of very moderate skill, the case still stands well enough, and even if we abate one-half, the scheme is still successful.

The product realized on the plan thus pursued, multiplies upon the planter from year to year, indefinitely. And here we may leave the discussion, since we have shown that no one who can invest enough to fatten at least one steer, and afterwards make a small outlay for a quantity of commercial manure, need forbear to plant, or fail to rear, valuable trees in number fitted to the extent of his means, for want of manure for his orchard. When four or five acres may thus be made to yield an amount of forage equal to the whole hay crop of large and well-managed farms, there is no excuse for want of materials.

Here we *must* leave the discussion, since it will be perceived that, by a repetition and extension, as results accumulate, they soon over-master the possibility of any definite calculations in advance. The initial measures having been taken, and the first fruits gained, the practical believer can pursue the details in a manner suited to his capacity and circumstances.

SHEEP, SWINE AND POULTRY TO BE FED IN THE ORCHARD.

There is one other and more direct method available to the bearing orchard, of too much importance to be omitted. Allusion must be made to sheep, swine and fowls, as profitable occupants of the orchard after the trees have come to bearing, and when animal crops are no longer profitable or advisable.

In view of all the attractions of wool and fatted mutton, presented by the existing state of the markets, it is a marvel that

the advantages of feeding corn and oil meal and roots to sheep and swine in the apple orchard, should have been so much neglected. The sheep ruminates so industriously and digests so thoroughly, that he needs no aid from grinding or cooking corn. There is no living thing more easily fed. And there is no need to doubt that there is great profit in feeding provender to sheep in summer and autumn. Heavy pelts and fat mutton are always goodly commodities, and next to cash in hand. Let pasture grasses lend their aid, and in the autumn let refuse apples, and the tops or roots of beets, be added to the corn or oil meal consumed. If the orchard is, for the time being, in grass, this will be an adjunct. And the other materials, fed to the fattening flock in the different parts, will be profitably converted to wool and flesh in part, and the residue spread broadcast to replenish the soil. And as the sales will pay the price of the unfatted sheep, and the cost of fattening, and ordinarily leave a profit besides, every farmer can easily see how he can enrich his orchard measurably without cost. The leaves annually cast by the bearing orchard go to replenish the soil. A supplement of ashes, plaster, superphosphate of lime or fine bone dust from year to year, added to the castings of the sheep, and the leaves, if preserved, will be speedily returned with usury.

Similar remarks are applicable in the main to the hog. Corn fed to him in the orchard is soon turned to pork, which commands ready cash, and to manure, which the apple tree, by its mystic power of alchemy, will readily turn to gold. The hog, too, is a grazing animal. And the advantages are still greater, if it is found expedient at any time, to seed the orchard to clover. Swine will thrive abundantly in the summer time on corn, clover and water, with a little salt. He is a good gleaner, too, to clean up the wormy and other refuse fruit, and the fragments of the leaves and roots of the beets or other root crops harvested. And if the soil is kept under culture, he will aid the plow by his industrious search for seeds and insects in the ground, and by his efforts to make his bed in a cool place beneath the heated surface.

Fowls are another class of profitable assistants in the distribution of fertilizers in the orchard, as well as in the destruction of insects. For this last service I have found ducks most useful; and no one, after trial, it is thought, will complain of them for want of sufficient capacity for consumption and distribution.

To sum up in short, it would seem that the farmer need neither to want manures for the orchards, nor to scant the supply for the ordinary routine of the farm, in order to enrich the orchard, so long as sheep and swine, and unfatted cattle, and corn, and oil meal can be obtained. Other methods, available in some cases, must be omitted for want of time.

PROFITS OF THE APPLE ORCHARD UNDER HIGH CULTURE.

To the end that it may be seen whether the promise of reward is sufficient to induce extensive planting and elaborate and high culture, it remains to take a rapid glance at the cash product to be expected. As to this we must do as all men are obliged to do in all other pursuits of business. We must be guided by the teachings of the past.

As orchards are usually treated, it not unfrequently happens that a small orchard yields a greater profit than all the rest of the farm. But the orchard under slip-shod culture, or no culture, affords no rule by which we can even approximate results. We are now pleading for well cultivated orchards, for the attainment of the highest practicable development of the productive capacity of the trees. For market and all manufactured products of the apple for commerce, none but constant bearers should be tolerated. Productive, showy and mainly long-keeping kinds, with less regard to intrinsic excellence than to popular favor, should be chosen for the commercial orchard.

We have seen what trees well reared and well fed can do, and do actually perform. The examples of individual trees cited give average crops of the different trees, ranging from eight to fourteen barrels. And Downing tells us of a tree in Duxbury, Mass., not before mentioned, which was more than four feet in diameter, and which bore one year 121½ bushels of apples. This would give a probable average from year to year of twenty barrels of merchantable fruit. It is to be remembered that these large trees cover large spaces. But if the same product can be obtained from a number of trees occupying the same space, we come to a similar result.

What is the value of an apple orchard by the acre under the culture heretofore advocated, on its approach to a condition of medium bearing? Let us try the question by the test of Mr. Woods' tree in Wilton. He has refused \$200 for that tree. He would have made a bad bargain at that price. For taking the

very low estimate of twenty dollars as the value of the average of forty bushels annually produced, we may take from that, two dollars annually to create a sinking fund, which will produce the sum of \$200 at the end of that time, when the tree will become too aged to yield its average product. Two dollars is more than is necessary for that purpose, but allowing this, upon the basis of \$20 as the annual product, we still have \$18 left. This gives a return of nine per cent. per annum on \$200, and the sinking fund created, as before stated, will yield that sum to take the place of the tree when its full performance ceases. But we have underestimated the value of the product, and the tree is actually worth \$300. But assume it to be only \$200. Its branches fill a circle three rods in diameter; giving it the space of the whole square, which embraces this circle, it will take up nine square rods. An acre would contain nearly eighteen such trees—call it seventeen; multiply by \$200, and we have, as the value of an acre of such an orchard, \$3,400, the value of an average farm in this State. If we give the trees a little space between the tops, on all sides and compute but fifteen such trees to the acre, we still have the value of \$3,000.

This estimate of value will be called extravagant, as proceeding upon the basis of the value of a single tree, and the mind is inclined to doubt the possibility of rearing fifteen such trees in a body. That may well be doubted. It is only argued that a larger number, of an equivalent productive capacity, may be so reared, not only upon one, but upon any and all of many acres. Let us try the question then by the test of Mr. Bailey's orchard at South Haven, before named, as reported by Professor Beal.

The soil and culture of that orchard are such as this essay advocates. The trees are fifteen years old, and therefore not arrived at, but approaching, that period next preceding that of full bearing. "The trees would run," says the Professor, "from about nine to fourteen barrels to the tree, all nicely colored." He does not tell us the distance, at which the trees are planted, but the proprietor has cultivated and cropped his ground the most of the time, and it is to be inferred, therefore, that the shade does not cover all the ground, also that trees which yield such a product at fifteen years of age, have had plenty of room to expand. Assuming then, that they are planted at the most common distance of two rods, there are forty trees to the acres. Assuming, also, that the average product is nearly the average of the

Professor's estimate, there would be 440 barrels of apples to the acre. Now if a farmer in Maine had had an orchard yielding such a product, he would have sold it at five dollars a barrel, realizing no less than \$2,200 to the acre, and five such acres would have made him rich, securing to himself and his family easy circumstances for the rest of his life.

The exhibit made by this orchard gives the startling answer to our question, that if it were here, and could be kept up to the product, and always realize this year's prices it would be worth more than \$10,000 an acre, even \$20,000. But last year was an unusual year for the Apple in Michigan. And yet, assuming the average of years to be one-half the product stated, at our prices for this year, the result is still startling. Or even if we assume this average at half the present market price, the cash returns far surpass the product of most branches of business. One-half of the estimated product, at half of this year's prices, would yield six hundred dollars to the acre. The coincidence of a full product in a given district, with high prices, arising from a failure of the crop in other districts, is likely to occur to the skilful and vigilant orchardist, at least once or twice, perhaps several times, in his life. When this does happen, the proprietor of large orchards, yielding maximum results, finds himself suddenly rich.

But these instances are not to be cited as proofs of annual products. The last year's history of Mr. Fisher's orchard at Woodstock, to which allusion has been made, though less striking, is perhaps, more instructive. And it has the advantage, that the exact cash product is known. And let us again try the question by the test of that orchard, trusting that no one will be startled by the declaration that a good Apple Orchard is worth \$1000 an acre. It was leased at \$300 a year. The product last year was two hundred and ten bushels, sold at St. John at five dollars a barrel, making \$1,050. Sufficient, with the refuse apples, no doubt, to defray the expense of the freight and of the sale, and leave one thousand dollars as the cash value of the crop on the farm. This orchard, though young, seems by the account to consist of many trees very thickly planted, and their productive capacity may now be nearly equal to that of a full grown orchard planted with trees two rods asunder each way.

We can deduce the satisfactory conclusion that a product medium in quantity and price, a few years hence, would leave for net profits two hundred dollars a year to the acre. This brings us

down from the clouds, and we may proceed to estimate from reasonable data illustrated by this case.

Suppose then, an apple orchard planted at the distance of two rods; this gives four square rods to the tree and forty trees to the acre. With proper treatment throughout, these trees at the age of fifteen years should yield from three to five barrels a year; and by continuous culture, they should within a few years afterwards, run up to the permanent average of five barrels, and ultimately go beyond.

Now five barrels to the tree, at two dollars a barrel, four barrels at two dollars and a half, or three barrels at three and one-third dollars, give ten dollars to the tree and four hundred dollars an acre.

And what says the past as to prices? Mr. Boardman's Survey of the Agriculture and Industry of Kennebec county was published in the report of the Secretary of the Board of Agriculture for the year 1867. In that essay speaking of the orchard of Mr. Pope, the author says, that gentlemen in 1856 sold apples for \$4 and \$4 50 a barrel, first quality. Some of us, who at that era, had half a dozen young mouths to fill, may retain a feeling remembrance of prices paid at two and three dollars and upwards for apples, of so called first quality, more properly called half refuse.

In the same work the author gives Mr. Smiley's account of sales of his apples for 1863, 1864, 1865 and 1866. In 1863 the average of the price obtained for his merchantable apples was \$2.51; in 1864, \$3.25; in 1865, \$6.04; in 1866, \$4.17. Assuming these to be the average of prices during those years, we have an average of $\$3.99\frac{3}{4}$ for the whole period of those years. It is safe to say that the average of prices for the whole period since 1866, is not much if any less. Even in 1872, with the abundant apple harvest of that year, at home and abroad, those who held their apples till the market was settled, obtained three dollars and upwards; and in the winter and spring the retail price rose to \$5.00 and \$5.25, as it is at the present moment. Prices have been steadily rising. The value of orchard crops in Maine by the census of 1850, was \$342,865.00; by that of 1870, \$874,569.00; more than two and a half times that of 1850, and about one and three-fourths of that of 1860. It is at least questionable whether there was as much bearing wood in the State during the decade next preceding 1870 as that next preceding 1850, and it is certain that the increase of the estimated value of orchard products, more than two and a half

to one, is largely due to the advance in prices. We are not likely to have any permanent retrograde. The demand is constantly increasing, and a foreign demand is now springing up, induced by the known superiority of American apples.

Cider, which formerly afforded no profit, now sells readily for ten dollars a barrel in any good market, and while the world is full of spurious vinegar, pure cider vinegar retails at forty cents a gallon and upwards; and every bushel of apples worked into cider yields a dollar in market. Liberally allowing four dollars a barrel for harvesting, making, freighting and selling, the cider apples are worth sixty cents a bushel; and those who have conscientious scruples against cider as a beverage, may make their cider into vinegar at an equal profit. And besides this a large quantity of vinegar may be made from the pomace by the addition of water and pressing anew, and the further addition of a few quarts of molasses to each barrel of this diluted apple juice, commonly called water cider.

We may therefore assume that a well reared and well managed orchard, not less than fifteen years of age will yield ten dollars to the tree in merchantable fruit. Every such tree will yield at least four or five bushels of inferior apples deemed fit for cider, besides refuse apples, which may be used to feed and improve the health and appease the appetites of any kind of farm stock. These all together are worth, at least two or three dollars more. But to keep entirely within bounds, let us assume the entire cash value to be only ten dollars to the tree. This gives four hundred dollars to the acre.

Now let us again liberally allow one-half of this amount to compensate repairs, care and culture, manure, gathering, packing and selling, and taxes, and we have a net profit of \$200 to the acre. This agrees with our estimated cash product of Mr. Fisher's orchard.

Here then is an annual net income of \$200 to continue as long as the orchard can be kept in good bearing condition. And to determine the actual value of the capital represented by this income, we must first ascertain what sum annually taken from this income and placed at interest, will in the aggregate, with the accumulations, produce the amount assumed to be the value of the orchard, or the capital represented, by the time when the orchard ceases to yield its accustomed income. The apple tree is one of longevity, under proper management, the orchard will continue

productive eighty or a hundred years, in the absence of any extraordinary casualty.

Let us then, to avoid extremes, suppose it will continue one-half the minimum named, forty years. The aggregate amount of ten dollars taken from this income every year for forty years and placed at interest at five per cent, with the increment would be \$1,207.00. Thus at the end of forty years, the proprietor has \$1,207.00, cash in hand, arising from a portion of the net earnings annually invested, as permanent capital, to take the place of the orchard now assumed to have expired. The balance of the net earnings annually received from his orchard, \$190.00, then may either represent a capital of \$1,000.00, yielding a net income of nineteen per cent., or of \$2,000.00, yielding a net income of nine and one-half per cent. per annum for forty years, when, the orchard product ceasing, the sinking fund of \$1,207.00 takes its place as permanent capital.

Again, let us put twenty instead of ten dollars a year into the sinking fund, as before, and we shall have in hand at the end of forty years, a fund thus created, to take the place of the now expiring orchard, and become permanent capital of \$2,414.00, or, say to make ample allowance for laches, delays and adverse contingencies, \$2,000.00. The proprietor then has remaining, out of the orchard's annual net income, \$180.00, for every year. This will represent the capital of \$2,000.00 at nine per cent. per annum for the forty years while the orchard continues, when the sinking fund of \$2,000.00 takes its place.

Now, who can deny that one-half this result, reached by so many cautious and ample allowances for all exigencies and contingencies, may be assumed with abundant safety as a realization? And assuming it, it is proved that the good apple orchard is worth a thousand dollars an acre, which was the proposition to be demonstrated.

CONCLUSION.

And if any farmer is ambitious to bequeath an estate of a hundred thousand dollars, he has only to leave his heirs well planted and well kept apple orchards of a hundred acres. If he is less ambitious let him plant and sustain fifty acres, or twenty, or ten, or five, or at least one acre, if that is the measure of his capacity, and the full fruition of his desires. If he can do no more, let no one fail to plant one tree and nourish and protect it. The petted

tree will learn to lean on him as the child looks to the parent for protection and sympathy ; and it will return to him a grateful and exceeding great reward. His children shall disport themselves under the shadow of its branches, and find health and solace in its fruit ; and his children's children to the fourth generation, when, perchance, no other monument shall remain to declare the story of his life.

W. P. ATHERTON of Hallowell. In order to ascertain what fertilizing agents are best adapted to orchard culture, and more particularly the cultivation of the apple orchard, it will be necessary not only to study the nature of our soils, but also of the tree and fruit. A great deal may be learned by observation and experience ; but experience, as too many of us are well aware, is a slow and expensive teacher. Something may also be gained by following the practice of those who have had long years of experience, but it is no certain guide, for differences of location and soil must be taken into account, and what is genuine nourishment for an orchard here may not be what is desirable elsewhere. Locality and character of soil cannot be discussed here, but the composition of the apple tree and fruit can be taken into consideration, and will serve in some measure as a guide in determining what manurial agents are best adapted to the orchard.

In the Appendix to Johnson's "How Crops Grow," there is a table containing analyses of the composition of the ashes of various plants and trees, by Prof. Emil Wolff, of the Royal Academy of Agriculture, at Hohenheim, Wurtemberg. Among these is the apple tree, the analysis of which shows a large proportion of potash, exceeding that of most of the other trees named, and a very much larger proportion of lime than that of any other tree except the oak, which shows 73 per cent. of lime.

From these analyses, we find that potash, lime and phosphoric acid enter largely into the composition of the apple tree, both wood and fruit, and hence we infer that these ingredients are necessary to its growth and development, and that when lacking they should be supplied. Ashes, bone-dust and lime are undoubtedly the best fertilizers for the orchard. A certain amount of animal and vegetable manure is requisite and should be given, but highly concentrated manures, such as guano, night-soil and hog manure, are not generally desirable, or if used at all should be applied in moderate quantities. This is the opinion of Mr. P.

M. Angur, State Pomologist of Connecticut. In a single experiment, however, with night-soil as a top-dressing, Mr. T. S. Gold obtained an abundant crop of fruit, of rare beauty and flavor.

But are the orchardists of Maine using ashes, lime and bone-dust, in sufficient quantities? I think they are not. The degeneration of our orchards, the small size and poor quality of much of our fruit confirm this opinion. A soil with only a trace of potash will make but a feeble growth, and we may as well try to run machinery without steam or water as to run our orchards without the necessary fertilizing matter.

Plaster has been used to a considerable extent, but lime only in limited quantities; and as for ashes, many of our farmers do not think them of sufficient value to retain and use them on the farm, but sell them to the soap manufacturer, who, having made his soap or potash, re-sells them to be shipped out of the State for the benefit of those who know how to value them. In this way thousands of bushels of ashes are annually shipped abroad, which ought to be kept in the State for the benefit of our orchards. These ashes are of great value, and it is to our shame that we do not appreciate them more highly.

Again, bone material is not sought after or used generally; I doubt if many of our orchards have ever received the slightest application of the same, either in bone dust or superphosphate of lime. It is known that some farmers and gardeners have used it occasionally, but the majority of them have not. No doubt hundreds of tons of bones are thrown away or wasted every year, which might be saved and ground, or reduced in some way, and used in the orchard to great advantage. Here, then, within easy reach, are three sources of fertilization. Our State abounds in lime rock from which is manufactured annually a large amount of lime, and this can easily be obtained by the farmer at a reasonable price. We can save our ashes instead of selling them, and if we need more for use in the field or orchard, can purchase them at the village or soap factory. Bones we can save and use and also buy bone-dust, fish guano and superphosphate. All these materials can be used separately, or in combination with muck or other vegetable manures. They should be applied liberally and frequently, but not to the *exclusion* of animal manure, for all plants and trees as well as man, require a variety of food. Having studied the nature of our soil and planted out that variety of trees

which we want, let us take care of them by all means, and success will eventually crown our efforts.

PRESIDENT GILBERT, from the floor, said: It seems to me that there is no point connected with the subject of fruit culture which we as individuals and as a Society should insist upon more earnestly, or urge more strongly upon the attention of cultivators upon every proper occasion, than

THE IMPORTANCE OF HIGH CULTIVATION.

The success of those who engage in fruit growing in the future, will depend upon high cultivation. A good quality of fruit results from high cultivation, and to illustrate this we have only to refer to actual sales which have taken place. We are all aware that first-class fruit, choice specimens of fruit, cannot be realized under a neglectful system of cultivation. If we would have choice fruit, we must produce it by thorough cultivation, and by fertilization of the soil in which the tree stands. This may be demonstrated by reference to results which have actually taken place. In my own county, we have several distinguished fruit growers; they make fruit growing a specialty, and therefore judging from the results which they have attained, I should say that it was necessary, in the first place, to give it just that special attention, without which we cannot succeed satisfactorily. If we would engage in it largely—if we would depend principally upon that for an income, then we should give it just that attention which it demands, and which is absolutely necessary to secure success. These gentlemen to whom I refer, making it a specialty, as I said before, have succeeded in obtaining large returns from the land occupied by their trees. The statements made in the paper read by Judge Gilbert, at the opening of the exercises this evening, in reference to the value of care as the means of obtaining great returns, are not at all extravagant. Even when apples were as plenty as last year, (1872), these successful orchardists to whom I refer, sold portions of their product as high as \$4.00 a bushel, in our own county market; but they were good specimens. Every apple was perfect, and such cannot be grown unless the recommendations made by Judge Gilbert are followed out. When an orchard receives that cultivation, the orchardist is enabled to produce that kind of fruit, and when he produces it, is enabled to sell it for these large prices. I recollect seeing in a Boston paper, last fall, an account of a

single bushel of *Williams' Favorite* apples selling for \$10 in Boston. I recollect a circumstance which applies to the point made by the speaker of the evening, in reference to the value of a single tree. In my own orchard stands a tree which for many years had produced worthless apples, and I grafted the whole tree. In the second year after I had grafted it, after the scions had grown two years, it came to bear again. In five consecutive years I sold from that tree \$100 worth of apples, and that exclusive of the amount used in my family, and by the men upon the farm, which was no inconsiderable amount, as they were very choice apples, and the tree stood very near the buildings.

During the hay famine, which farmers remember very well, I recollect of being in a neighbor's orchard, and pointing to a tree well laden with fruit, said he, "if I had fifteen trees in the condition of that one which we are looking at, I would snap my fingers at the hay famine, for I would obtain more money from those fifteen trees than I lose from the short hay crop." This illustrates the profit of orchards, under a good state of cultivation. The returns are sure; the reward is bountiful; it can be depended upon, and all that is necessary is to give the cultivation which the first speaker this evening recommended.

HENRY INGALLS, Esq., of Wiscasset. I have no information upon this matter which is not possessed by every member of the Society present; and can only give you some of my own experience. I have a small garden, a portion of which is devoted to fruit trees, and a portion to vegetables. I planted it in the fall of 1865. I have used barnyard manure occasionally, but as a rule I have used lime and ashes, and the result has been entirely satisfactory. My trees are apples, pears, and plums. My apple trees have borne sparingly up to this time, but their growth has been entirely satisfactory. I have had an abundance of pears for four or five years. My judgment is, that ashes are a very valuable manure—the best manure that can be found for trees. I had a car load of lime-ashes from Rockland, and my impression is, that they cost ten cents a bushel, exclusive of the freight.

I also have grapes, but as that subject is not under discussion, I will say nothing about it.

A GENTLEMAN. What kind of dressing do you use for grapes?

MR. INGALLS. I have used the same dressing for grapes as for my apple and pear trees. I have used barnyard manure once in three or four years, and the balance of the time I have used ashes.

I have also used superphosphate, porgy chum and bone dust. I used some porgy chum last spring, which I think proved very satisfactory.

HON. HANNIBAL BELCHER, of Farmington. I must confess that I have paid less attention to this matter of fruit-raising than I have to some other branches of farming. But it is a very important interest in our county. We have been very successful in raising certain varieties of fruit. I am told by farmers there, that orchards which have been well taken care of and have been in suitable locations, have been the most successful and profitable parts of their farming operations. From observation and what information I have received from books and farmers, my idea is that it will not do to depend entirely upon ashes or lime alone, for many years, for our orchards. We must have some animal manures, and this matter of the cultivation of beets to feed to cattle, I regard as a very important thing to consider. I believe, from what experience I have had, that there is no crop which can be so successfully raised and with so much certainty, and where you can gain so much manure, as you can by raising and feeding beets. I think a thousand bushels of beets may be raised to an acre; and one advantage in raising beets is, that you can raise them for quite a number of years upon the same ground. They do not seem to exhaust the soil as the grain crops. Last year, from 125 beets in number, I had eight bushels. They leave the ground in a very good condition, and in many parts of the State, I have no doubt it is one of the best crops that can be raised.

In order to put our lands in a good condition of cultivation, and keep them so, it will be found necessary after a series of years, to use more or less of animal manures and not depend entirely upon lime and ashes. I think that the turning of sheep into orchards, is frequently of great advantage, especially if the trees are guarded somewhat with stakes about them, and laths nailed upon the stakes, to keep the sheep from destroying the body of the tree. Some of the most thrifty orchards in our county have been thus restored to and kept in a thrifty condition.

We should devote our attention to bringing up our soil in every way, and in order to do so, we must resort to animal manures to a certain extent. I do not believe that one kind or one class of special manures, put on year after year, for a long series of years, will ever be successful. We must have something different, and I think that has been the experience of the best orchardists in the

country. And when we talk about this matter of farming in the State of Maine, the great question comes up, as it always does, What shall we have for manure, and how shall we procure it, and how shall we keep up our supply? I am fully convinced from my own experience and observation, that the remark of Judge Gilbert in relation to the raising of roots and especially the beet, is a very important matter with us, in connection with the raising of fruits in this State, and we shall find it so.

Mr. Belcher proceeded to urge the importance of growing more fall apples, and spoke of a variety raised extensively in Franklin county, known as the "Dean" or "Nine Ounce Apple," and requested Mr. Goodale to give a description of it.

Mr. Goodale replied, giving a brief description of the fruit, and said that it had been repeatedly discussed before the Board of Agriculture, and that a description of it might be found in the Report for 1872, [page 414.]

HON. S. F. PERLEY, of Naples. After listening to the wonderful results obtained in certain individual cases, it seems hardly worth while for me to say anything about what I have done. I will, however, say as much as this, that I approve most cordially, from experience, the remarks that have been made in regard to ashes as a fertilizer for apple and pear trees. The past summer I used three or four hundred bushels, and my trees, where they were put on, have done finely. One other manure that has been mentioned here, as a special manure for fruit trees, I can say from experience is valuable, and that is the manure from sheep. The best thing I have ever done with my fruit trees, was to turn a flock of sheep among them. In one case, my trees stood about 30 feet apart, and some of them were miserable, (and, by the way, I will say here that fruit trees must have room enough. If your tree spreads three or four rods in the limbs, you may reckon six or seven rods for the roots.) I was about to say that I had an orchard of four acres, the trees 30 feet apart, which would give more than forty to the acre; but still there were some trees missing, so that properly there were not forty to the acre upon the land. Simply by putting in sheep, and keeping them there, letting them feed it pretty close, I brought it up from producing nothing to an average of \$100 per acre, clean profit, beside the cost of labor, which is the best result I have ever had from cultivating fruit trees. So far as my experience goes I should say that ashes and the pasturing with sheep furnish the best manures for the orchard.

A GENTLEMAN. How about sheep injuring the trees by rubbing against them?

MR. PERLEY. Sheep will eat a great variety of forage, more perhaps than any other animal we have. They seem to be hardly domesticated yet. And if you put them in a young orchard where they have nothing but grass, if they find the bark of a tree a little mellow they will gnaw it. But in an old orchard I do not think there is any trouble. I have never had any. I do not think the rubbing against the trees is to be considered at all. I have never seen any ill effect from it.

GEO. E. BRACKETT, of Belfast. I believe no gentleman, of those who have spoken to-night, has referred to mulch, or vegetable material, as a manure for apple trees. I have a neighbor who is rather peculiar, and among his peculiarities he believes that animal manures are not suitable for his orchard. He is a very large orchardist, and raises a large quantity of apples every year. He has been engaged in the business from his boyhood, and he is now about 50 years of age. He depends solely and entirely upon vegetable substances, used in the form of a mulch, or top dressing, for his apple trees. He has grown most of his trees from the seed, and has obtained, not an extraordinarily large growth, but a sound, healthy orchard. He maintains that trees fed with concentrated fertilizers and animal manures are forced to an unnatural growth, and that the seasons which we have affect them. That is his opinion, and the result of his practice has been very good. He depends entirely upon vegetable matter which he obtains from the woods,—decayed leaves, ferns and brakes, which he uses around his trees, and the result has justified his practice.

MR. ATHERTON. I quite agree that the application of animal manure is necessary to some extent, but I think the trouble has been that the most of the farmers have depended entirely, or principally, upon it, and have not applied ashes and lime in sufficient quantities.

JUDGE GILBERT. I should like to say one word upon this subject of mechanical culture and vegetable manures, and in connection with it to allude to the operation of leached ashes. I do not know certainly that scientific men have yet found out the secret of the value of leached ashes. I have pondered considerably upon what a soap-boiler in Bath, whom I suppose to be a man of truth, once said to me. He bought a soap establishment which had been closed for four or five years, and with it a quantity of ashes

which had been leached and thrown out upon the floor of the factory, and had lain there during all that time. He told me the exact number of barrels of soap that he made from leaching those ashes over again, which was the full number that the unleached ashes would have made. If there is any scientific man here who can explain that, I think he may show us an important truth. I think it resulted from the power of the leached ashes to absorb alkali from the atmosphere.

Now, nitre is a very important agent in vegetation, and what I am coming at is this, that I deem the ploughing of the orchard to be of very great value, and I think that value arises chiefly from this power of the earth to absorb nitre from the atmosphere, in the same way that it is absorbed under old buildings where the ground is dry, and there is no water to wash it away. Let an orchard be laid down to grass, and sheep and swine run in it, with the teams that haul the apples, and the soil is constantly trodden down, and the roots of the grass are almost a solid net-work; and there is but a very indirect and feeble atmospheric action under that surface; but when we break that soil, and pulverize it, and throw it up, then we distribute a stratum of loose earth on the top which has this power of absorption, and every time it rains or the snow melts, the water absorbs the accumulated nitre, and carries it down to the roots of the tree, and comes out clear spring water. So I say, plough the orchard, harrow it, and keep the surface loose.

I have used superphosphate as a manure for fruit trees, to a small extent, with great satisfaction, and intend to continue it; and I expect (although I cannot now demonstrate any successful experiments), to reach very satisfactory results. And while mulching is good, if we want profitable orchards we must, in my judgment, have something more than leaves and grass.

G. B. SAWYER, of Wiscasset. I wish to say, that I believe in mulching, not only for its generally accepted purpose of protection to the roots of the trees, but also as a most efficient, economical and natural means of fertilization; and I practice it to the fullest extent in my power, using sea-weeds and the leaves of deciduous trees, chiefly, for the purpose.

But, inasmuch as the general subject of mulching has not been announced for consideration at this session, and is not, therefore, properly before the Society, (except as a method for the application of manure,) it cannot at this time receive that attention which

it deserves. I would suggest, therefore, that it should be reserved for our special consideration at some future meeting.

THE PRESIDENT. I believe that the sooner we disabuse ourselves of this idea of growing grass and apples from the same ground, the sooner we shall succeed in growing good fruit. It is too much to expect or to demand from the soil at the same time. As a successful orchardist remarked to me on passing through his orchard a year ago, "It is no use, you cannot grow apples and grass on the same field." I will qualify that statement: you can do it, but it requires the very highest state of manuring in order to obtain both. If you would raise good fruit and at the same time a good crop of grass, you must manure very heavily with animal manure, and you must repeat the application very often. But if a good, strong soil set to apple trees is kept under good cultivation with no vegetable matter growing there only the trees and their fruit, it requires but little manure besides what nature showers down upon the land, in order to grow bountiful crops of fruit. Mulching is practicable with small trees; it is desirable with all trees. I was about to say it was impracticable with an orchard of full grown trees, inasmuch as it becomes necessary to cover the entire ground in order to prevent a growth of grass and weeds, and if a man has an extensive orchard, it is impossible to do it. But the plough tells the story.

MR. SAWYER. I did not intend to speak of mulching as a substitute for cultivation by any means, but as a most valuable adjunct to it, and as furnishing an abundant source of fertilizing material. Mulching as usually understood, does not mean covering the whole ground of an orchard; and we ought not to say because a man has an extensive orchard in which he cannot cover the whole space occupied by the roots of large trees, that it is impracticable to do something towards it. And why may not any farmer do what the gentleman from Belfast, (Mr. Brackett,) reports his friend as doing, "go into the woods and get cart loads of leaves, ferns and brakes," to spread upon his land? Why may not those of us who live near the seaboard obtain unlimited quantities of rock-weed for the same purpose? But when the trees of an orchard become large, spreading and thrifty, (as we hope some day to see them in all parts of our good State,) the branches, extending with the roots, will annually shower down upon the teeming soil the exceeding wealth of fertilizing material compounded by the hand of the Lord of the Orchard and of the

Harvest, in the mysterious laboratories of nature, for the sustenance and perpetuation of vegetable life. Thus the soils which sustain our majestic forests have been enriched for ages, and

"Thus ever from out old decay
A new creation springs."

Adjourned.

SECOND DAY.

The forenoon of Thursday was occupied by a business meeting of the Society, which was held in the room of the Committee on Agriculture.

The President in the chair.

The reports of the Treasurer and of the Executive Committee, for the year ending Dec. 31, 1873, were severally presented and accepted.

The committee appointed at the annual meeting at Bangor, to revise the by-laws, presented their report, recommending sundry amendments. The report was accepted, acted upon in detail and adopted. (For by-laws, as amended, see appendix.)

It was voted expedient to hold an exhibition in the autumn of the present year, provided arrangements can be made satisfactory to the Executive Committee.

Judge Gilbert, of Bath, offered the following order, and moved that it lie upon the table for consideration at a future meeting, viz. :

Ordered, That there be a standing committee on Nomenclature, to be raised or filled in case of vacancy, in such manner as the Society shall order, whose duty it shall be to determine and report the true standard names of all old varieties of fruits which the Society may from time to time recommend for general or local cultivation; and to report names to be given to such new varieties as shall be so recommended. And it shall be the further duty of said committee to make, or cause to be made, at the expense of the Society, upon some durable kind of paper suitable for permanent binding, and submit, with their reports of names, exact outline figures of central sections of apples and pears, with stem, calyx and core, which shall be so recommended as aforesaid; in all cases selecting for that purpose such samples as best represent, in size and form, the true types of the several kinds, under good

culture,—which motion was adopted, and the order accordingly laid on the table.

It was voted to raise a committee of three to prepare and report at the next annual meeting, a catalogue of fruits suitable for cultivation in Maine; and Messrs. Z. A. Gilbert, of East Turner; S. L. Goodale, of Saco; and S. F. Perley, of Naples, were appointed as said committee.

Adjourned.

AFTERNOON SESSION.

The Convention re-assembled at 2 p. m., the Vice President in the chair.

The subject announced for this afternoon was Grape Culture, and was opened by Dr. J. C. Weston, of Bangor, Corresponding Secretary of the Society, who addressed the Convention as follows, illustrating his remarks by the exhibition of samples of well grown and thoroughly ripened canes cut from his own vines:

THE CULTIVATION OF THE GRAPE.

BY DR. J. C. WESTON.

I. *Grapes in Open Culture*.—As far as we can penetrate the dim vista of the past, the grape-vine existed. It appears to have been coeval with the human race. It originated in Asia, and accompanied man in all his wanderings in Europe and Africa. Its delicious fruit has always been used to refresh and invigorate, and the fermented juice of the grape to cheer and exhilarate.

The same variety, the *Vitis Vinifera*, which had been successfully cultivated from the remotest antiquity on the eastern continent, was brought by the earliest immigrants to America, but it was soon found by experience that it could not well flourish here, except in certain favored localities, or under glass, where an artificial climate could be produced and maintained. The rapidly varying temperature peculiar to the country, the excessive changes from heat to cold, from dryness to moisture, and the reverse, predispose to mildew and blight, and the rigor of our winters often injures or destroys the exotic grape. Hence it was necessary to seek hardy varieties of the *Vitis Labrusca* family which would better endure the vicissitudes of the climate.

From the native stock, improved or ameliorated varieties of earlier maturity and of great excellence have been obtained by

the skilful cultivation of seedlings, and valuable hybrids have been produced combining the hardiness of the native vine with the fine flavors peculiar to the foreign fruit.

Having been successful in raising in Bangor the different kinds of grapes, it will be the endeavor and object of this paper to detail briefly my method of grape culture, and the results of my experience.

The premises contain about three-fourths of an acre, with buildings on the northeasterly side, affording shelter. The streets on three sides are graded, so that they are about ten feet below the surface of the lot and with the cellars provide drainage.

The soil is a warm, dry, friable, light and sandy loam, with a porous subsoil underlaid by a ledge. Such a soil is best adapted to the grape, though it will flourish in good warm corn land. If the subsoil is not naturally dry, underdraining is indispensable.

The vines on the walls of the buildings and elsewhere in open culture, have a southwesterly exposure, and the buildings and trees in the vicinity give shelter. It is desirable not only that they should be exposed to the sun from morning to evening, but also that they be protected from the prevailing winds, to induce early ripening of fruit and wood, and thus secure the best results. This shelter may best be provided by tight board fences, or by evergreen hedges.

To ensure a vigorous growth, uniform productiveness, and permanent health, a compost was prepared months in advance, both for the bed of a cold grapery and also to enrich the ground for the reception of native vines in open culture, consisting of ten loads of meadow muck, four of well decomposed manure, three of street scrapings, one of sod, one of blacksmith's cinders, iron filings and hoof parings, one of whole bones, with many broken beef and sheep skulls, twenty bushels of unleached ashes, one barrel of lime slaked with water containing a saturated solution of common salt, (oyster shell lime preferable), twenty-five bushels of oyster shells, a barrel of gypsum, and fifty bushels of broken charcoal. These are the materials to supply the potash, lime, ammonia and other necessary food and stimulants to the vine. They yield a healthy, firm and well ripened wood, and sound, well colored and finely flavored grapes.

As the native vines are more hardy and vigorous and will grow with proper exposure and shelter in the warm soil of a well cultivated garden or farm, a more simple compost for them alone would

suffice, consisting of muck or well decomposed manure, bones or bone dust, gypsum and superphosphate of lime.

Before planting the vines for open culture, it was determined to set them about six feet apart and train and prune them according to the single cane and spur system. Thus they are more easily managed,—can readily be fastened to poles or narrow trellis,—can more easily be laid down in autumn, and more vines or varieties can be raised in a given space.

In the place selected the earth is removed to the depth of eighteen inches, the barren subsoil discarded, and the bottom of the hole filled with stones, oyster shells and bones to the depth of about six inches, so as to ensure a dry bottom. The compost is thoroughly incorporated with the soil and garden loam, then vines one or two years old, with well ripened, solid wood, with roots clean and healthy, are planted in the Spring as soon as the soil is friable, removing the old earth from the roots, when started in pots, and spreading them out in all directions, diverging laterally downward from the stem, and leaving the crown of the roots two inches below the surface. The top of the vine is cut off so as to leave three or four good buds. When these have pushed, the most promising shoot is trained upward in a long rod and fastened as it develops, to a pole or trellis, and the others are shortened beyond the sixth or eighth leaf. At the axil of the side leaves a small branch appears, from time to time, technically called a lateral, which is pinched off at the end of the first leaf, except the two upper, which are left until the next pruning, one of which may be used in case of accident to the leader. At midsummer all the lower laterals are removed. This treatment promotes the rapid growth of the leading cane. The ground is carefully weeded, loosened occasionally with a fork, so as not to disturb the roots, and mulched in early summer with grass from the lawn, or other litter.

The first of September the leader is stopped, leaving one or two upper laterals, which subsequently are pinched off, and thus the growth is gradually arrested and ripening of wood promoted. In the autumn a small quantity of old manure is spread upon the ground. As soon as the leaves have fallen or been destroyed by frost, the remaining laterals and the top of the cane which is not well matured, are removed, and the cane is bent over a log or block of wood, so as not to strain the crown or crack the vine,—placed in a shallow trench the first year, surrounded with leaves and covered with a board and evergreen boughs to protect it from the effects of alternate freezing and thawing.

The second year, when all danger of freezing has passed, the vines are uncovered and remain on the ground until the buds have uniformly swelled and given promise of putting forth leaves, when they are tied permanently in their places. Each bud on the cane now develops into a branch called a spur, which is allowed to grow until eight or more leaves are formed, when it is cut off at the end of the eighth leaf. When it pushes again it is stopped at the end of the ninth, and so on, always pinching off one leaf beyond the last. At the axils of the leaves of these spurs laterals push from time to time. The laterals next to the cane are removed as soon as practicable without endangering the bursting of the buds at their base, which are for use the coming season and the others are pinched off at the end of their first leaves. The main cane is treated as last year and grows until it has reached the desired height, or until the last of August, when it is stopped. If fruit appears, all the bunches must be removed except one or two on vigorous vines, which may be retained to test the kind.

At the close of the season, manure is again spread over the surface, immature wood is removed at the end of the cane and all the spurs are shortened so as to leave three buds at the base of each. Part of these buds or the spurs may be destroyed by an inclement winter, but if all escape uninjured it is easy to remove surplus shoots; it is impossible to restore the lost, hence our aim in the fall pruning is to guard against barren canes by leaving too many instead of too few buds. The vines are again laid on the ground and covered with evergreen branches and also derive additional protection from the snow.

The third year all the uninjured buds will put forth leaves. Many of the spurs will show fruit. The danger now is that the novice will let all the fruit remain on the vines and thus impair their vitality and make them afterwards comparatively barren. It requires then great firmness and decision to remove about three-fourths of the bunches. The tendency of the vine is to make its most vigorous growth at the top. Hence the strong spurs near the summit may bear more heavily and those near the bottom must be favored lest they be lost. No spur this year should retain more than one bunch; all the smaller, weaker, none. But when at a more mature age they become permanently established, having been trained by judicious pruning to fill the allotted space, they may be allowed to bear more abundantly; but even then, if one half of the fruit is removed, the remainder will be of better

quality, will mature earlier and will not so much exhaust the energies of the vine. Strong spurs may retain two bunches of such grapes as the Delaware, and but one of a larger variety. The spurs and foliage need not now be so much repressed as when the object was to give proper form and symmetry to the vines, but may be proportioned to the amount of fruit. The native vines will not bear, and do not need such severe pruning as the foreign. They should retain all the leaves which can be freely exposed to the sun and light. The leaves are the lungs of the plant. They elaborate and purify the vital juices for the sustenance of vine and grape. Under the vivifying influence of the sun they prepare the necessary food, the sugar, the acid, by the intimate commingling of which we obtain the delicious vinous flavor. They manufacture the pigments which paint the fruit with all the different hues of pearl, yellow, red, purple and black. It is an error to remove foliage to let the rays of light fall directly on the bunches. At least one leaf should intervene. They will mature better and have a richer flavor if properly shaded and clothed by the leaves. But when crowded, the surplus spurs, particularly the more slender, should be removed, and those retained should be shortened, but leaving at least four leaves beyond the fruit; and the laterals, between the main cane and fruit, should be broken out and the others shortened at one leaf, except the terminal, which should be permitted to grow until all danger of the buds bursting at the base of the spur has passed, and then pinched off. The rampant growing branches should be repressed, and the effort at the summer pruning should be to expose the remaining foliage to the light and develop the whole plant uniformly. If, however, needed spurs have been lost, the vacant places may be filled by training branches at different angles from a common base, or from the spurs above or below, on which three buds were left at the last autumn pruning. When the vine becomes old, or is destitute of fruitful spurs equally distributed, a new cane may be trained up from a side or bottom branch, and when it attains sufficient size and age the old wood may be cut out, and thus the former productiveness may be renewed.

Pruning the vines in spring is impracticable on account of the exhaustive bleeding which results. When necessary it should be deferred until the leaves have well developed. Then it may be performed with impunity.

When it is desired to increase the number of any particular variety it may be easily and successfully accomplished by laying down, in spring, before the leaves have started, a lower branch or cane trained the preceding season for the purpose, in a shallow trench, pinning it down and covering it with two inches of good soil. All the sound eyes or buds will put forth roots and send up new vines, which must be fastened to sticks for support. By autumn they will exist independently and may be cut from the parent stock and also from each other, and transplanted after the fall of the leaves. By this mode of culture about a bushel of ripe, native grapes has been raised for several years in a limited space on the south wall of the building, and in the garden, suitable for the table, for jelly and for wine. They have not been subject to the attacks of insects, have not suffered from diseases, and have been but slightly affected by mildew. The chief obstacles to success have been the shortness of the growing season and the severity of the winters.

There have been on trial the Delaware, Black Cluster, Hartford Prolific, Israella, Iona, Rebecca, Salem, Eumelan, Diana, Allen's Hybrid, Concord, White Sweetwater, Isabella and Catawba.

The Delaware has proved the most desirable, combining moderate vigor, hardiness, and productiveness of vine, early maturity and superior quality of fruit. It usually ripens from the 15th to the 30th of September. Last spring all grape vines started late, and were retarded by cold winds, hence the whole crop was not thoroughly ripe before the 10th of October. A grape equal to the Delaware in all respects, which would mature before the early frosts of autumn, would be exceedingly valuable for Maine. Destructive frost often occurs between the 20th and 30th of September,—destroys the foliage in exposed localities, and prevents further ripening.

The Black Cluster, or Burgundy, is the hardiest and earliest of the foreign grapes. It begins to color the first of September, improves by hanging, and usually fully matures by the 20th of the month; bunch small, very compact, berries medium, black, flavor sweet and excellent, improved by thinning both bunches and berries. It requires extra protection in winter. It was formerly the favorite grape of the gardens of Montreal.

The Hartford Prolific is hardy, vigorous and very productive, as its name indicates, and is the most easily cultivated. It flourishes in any good corn land, bears neglect better than any other variety,

matures its fruit early, but often drops its berries, and its flavor though sweet, is blended with a disagreeable acidity in its pulp. Many would reject it for better varieties.

The Israella is a vigorous grower, and prolific bearer of medium compact bunches, with medium sized berries, which need thinning to develop their best quality. The fruit is black, with thick skin, flavor sweet and good, but not best, and its season of maturity is not earlier than the Hartford.

The Iona is a grape of excellent quality, sweet, spirited and delicious, bunches large, a little loose, with rather large red berries. It bears abundantly but it starts late and is of late maturity. The past two years it has ripened its fruit by the middle of October.

The Rebecca is the highest flavored of those tested, but unfortunately it is of slender growth, is tender and matures late, and the vine may be lost if not sufficiently protected from our rigorous winters. If raised on a wall, in a sunny, well sheltered location, it will ripen in October, and its beautiful golden fruit will well repay the labor of the amateur.

The Salem is one of the most promising of Mr. Rogers' hybrids, appears to be rigorous, hardy and productive, with large red berries, which are very sweet, sprightly and aromatic. The young vines have borne two years and ripened their fruit before the 10th of October.

The Eumelan has also borne two years in Bangor—starts early, is a good grower with rather short joints, seems to be hardy, has medium compact bunches, medium sized, purple berries of good quality, but not as sweet as the Delaware with which it ripens; it promises well.

The Diana has a favorable location on a brick wall; is a rank grower, long jointed, takes much room, and though late, has always ripened a part of its berries of a reddish lilac color with vinous aromatic flavor. The fruit hangs well, uninjured by late frosts, and is enjoyed when earlier sorts have disappeared.

Allen's Hybrid is another delicious grape of late maturity. It resembles the Sweetwater in bunch and berry. It has not yet fully ripened its fruit, but the few berries which have matured bespeak the highest character it may attain in a warmer climate.

The Concord has been the most rampant grower, and has produced the largest bunches and berries. Its heavier spurs in early summer, sometimes break out by their own weight at their junction

with the main cane, or are blown out by the winds unless seasonably tied to the poles. It does not tolerate severe pruning. Its berries color well, in October, but the season usually is not long enough or warm enough to give sufficient sweetness to the fruit.

An attempt was formerly made to raise on a wall, the White Sweetwater, Isabella and Catawba, but excellent as they become in a more southern latitude, seldom was the season sufficiently extended to enable them to yield many satisfactory matured grapes, and they were discarded for earlier varieties.

The experience with these varieties has been briefly reported, with hope that after learning the results obtained by others in the various sections of the State, it may be ascertained what kinds are best adapted to different localities and what are most suitable for general cultivation. And if this paper, already extended to an undesirable length, shall give in the least degree any useful practical information and thus lead to the more successful cultivation of this noble fruit, it will not have been written in vain, but its object will be fully attained.

II. *Culture of the Foreign Grape in the Cold Grapery.*—The winter of 1856-7 having been very disastrous to fruit trees and vines, it was decided in the spring of 1857 to erect a cold grapery and attempt the culture of grapes in an artificial climate. The compost heretofore described was immediately prepared, and a site selected sloping to the southeast, upon which the rays of the sun fall until late in the afternoon, and cedar posts were placed in position to support the building. The earth was then removed to the depth of two feet eight inches below the tops of these posts to afford a space for the grape bed, technically called border, and the house was afterwards erected in the autumn.

The border is the important matter. It must be composed of such materials as will yield an abundant and permanent supply of healthy food to the plant, and must be so made that no stagnant water shall ever enfeeble the roots. It is 34 by 50 feet. At the bottom, stones, oyster shells, brick bats and bones are placed to the depth of eight inches, covered with leather scrapings, refuse boots, shoes, old plaster, grassy sod, &c., having a drain extending out at the lowest corner. The compost, garden loam and yellow soil are well mixed and deposited during the summer, so as to make the border loose and rich, and two feet deep when settled. It extends over the whole inside of house, and outside

twelve feet in front and ten feet at end. The house is 22 feet by 40, with span roof, having 13 rafters, about three feet apart. It fronts southwesterly, with end southeasterly, is four feet high from sill to plate, has on the roof glass double thickness, six inches by eight, and at front and end eight by fourteen inches. The back wall is composed of one and a quarter inch stuff, grooved and matched and put together tight and double, to exclude the cold. The top sashes are in two lengths and every other one in front is made to slide easily over the lower, and all the upright windows at front and end, between sill and plate, are suspended by hinges, to provide ventilation. A brick and cement cistern is furnished in a convenient corner to receive rain water from the roof.

In November, vines one or two years old, in pots, consisting of McReady's Early White, Black, Wilmot's, Victoria, Champion and Wilmot's No. 16 Hamburgs, White and Grizzly Frontignan, White and Rose Chasselas, Early White Muscat, Muscat of Alexandria, Cannon Hall Muscat, White Nice, Black Prince, Syrian and Reine de Nice, are procured. Of these, the first named variety is the earliest; the last named, the latest, and the Hamburgs the most profitable. They are planted on the *inside* of the house, eight inches from the wall, under each rafter. The roots are spread out so that they will not be entangled, and covered two inches deep above the crown with a mixture, like pot earth, of sand, leaf mold and a little bone and charcoal dust, that they may start vigorously. After planting, boards or planks are placed at convenient distances, to serve for walks to prevent treading upon and hardening the border.

In December the vines are laid down and covered with leaves and boards, and the house is occasionally ventilated in winter when the snow does not cover the roof.

About the middle of April, when all danger of freezing has passed, uncover the vines and water the border thoroughly, which is now very dry. Afterwards, when the weather is warm, keep the atmosphere constantly humid by sprinkling the vines and ground daily in clear weather, using water which had previously been taken from the cistern and exposed in barrels until it became warm. When the thermometer indicates about 80°, open the top windows a little in the morning, more at noon, and close early to retain heat during the night. Generally in cool, clear weather, open and close by degrees, to avoid a sudden change in temperature.

The grape-vine has two important stages; a period of growth and a period of maturation, to each of which regard must be constantly had in the treatment. In the first it is our aim to promote and hasten the most vigorous development of vine and fruit by abundant moisture, heat, and stimulating liquid manure. A regular heat, between 80° and 90°, if possible, must be maintained, though 100° or more will do no harm if tempered by plenty of moisture. All cold drafts must be excluded, only admitting air to prevent too high a temperature. In the second stage it is our object to expedite ripening by gradually diminishing moisture and heat, and increasing the supply of air.

About the 20th of April the buds will push, and the same system of pruning is practiced as recommended for vines in open culture. The canes as they extend are fastened with listing to a wire trellis, twelve inches from the glass. In the season of growth, water each vine with a pail full of soapsuds applied from a watering pot every Tuesday, and on every Saturday a pail full of a solution of Peruvian guano, one or two quarts, well mixed in a barrel of water, and used immediately. Remove weeds, keep the border loose and mulch outside in summer. The leaves are never syringed, but are sufficiently watered by the evaporation of water sprinkled on the border, and no bottom air is ever admitted by opening the windows at front and end until the wood begins to ripen, as such drafts may cause a check to growth and predispose to mildew, but in August the ground is sprinkled less often, and more air is admitted in clear hot days. September 1st, pinch off the ends of the canes, discontinue watering, except with soapsuds, which may also cease by the middle of the month; gradually admit bottom air and keep a current of it constantly circulating to ripen and harden the wood. When the bark becomes brown, and the wood solid, open all the windows daily, only closing them to exclude rain or frost. It is well to preserve the leaves until they become yellow and ripe and fall off, then we may be assured that nature's work is well done, and that the vines may safely lie dormant until another spring wakes them to renewed life.

In November cover the border inside and outside with manure, to protect the roots, cut off the canes, which are ten or twelve feet long, so as to leave five feet of solid wood, wash them with soapsuds, lay them down on the border, cover them with leaves or other warm material and boards, and also spread leaves abundantly over the inside border. Fasten wooden shutters to the

upright windows to protect the glass from the snow. Afterwards open the house occasionally when too hot.

In the following spring, as warm weather approaches, open the house on warm days to prevent the buds pushing too early, for when once started they must not receive a check. About the middle of April, uncover the vines and remove the leaves from the inside border, and thoroughly saturate it with water poured upon the surface manure. Let the vines remain on the ground, and sprinkle them daily until the buds uniformly swell, then sling them loosely to the wire trellis, further from the glass at first, to avoid their being affected by late frosts.

In May remove the coarsest manure from the border and fork in the remainder. The same process in respect to watering and ventilation throughout the second year as the first, and the same directions in respect to pruning and bearing, apply as those given in the case of the open culture of the vine. Spurs now grow from the main cane, and some show fruit, but all bunches must be promptly removed except one or two on a vine, lest it be overborne and permanently weakened. Tie the main canes to the wire trellis with strong listing and the spurs with bass matting.

When the fruit is in blossom keep the house more closed and warm. After the fruit has set, pinch off the spurs four leaves beyond the bunch, and all the spurs not bearing, eight leaves from the cane. As soon as the berries attain the size of peas, tie up the shoulders with bass matting and cut out half the berries, particularly the smallest, with a sharp-pointed grapery scissors, and remove the laterals of the spurs between the bunch and cane, and all the tendrils, and pinch off the other laterals at one leaf, except the terminal, which may be shortened afterwards. If before ripening, any berries crack, remove them lest they cause decay to others by contact.

On the 20th of June and 1st of August sprinkle two pounds of flour of sulphur about the grapery when the house is hot and dry, to prevent mildew, and let it fall in the foliage if any mildew is discovered. About the middle of August some of the fruit begins to color, then discontinue the sprinkling and the watering with guano, and subsequently with soap suds in the ripening of the fruit, except for those vines whose berries have not yet colored, to whose roots on the outside it may be applied on dry mornings. Keep the house dry and well ventilated and pinch off the upper

end of the cane to stop the growth and cause the sap to circulate more freely in the lower part of the vine.

Early in December cut back the canes so as to leave them about two feet longer than last year, and all the spurs so as to leave three buds to guard against loss. Wash them with a preparation consisting of four pounds of sulphur, two quarts of soapsuds mixed to the consistence of cream, and a little tobacco, applying it with a brush, and cover the vines and border as last year.

The third year the house and vines need the same management as detailed heretofore.

The tendency of the vine is to make its most vigorous growth at the top and rob the spurs at bottom and sides. This is to be repressed, by encouraging the buds to push uniformly in spring, by keeping them in a horizontal position, or by fastening them to the wires by the middle and letting the top hang downward, by early pinching off the more rapidly growing spurs and bearing them more heavily on the top branches. The spurs should average six or eight inches apart. If nearer, they are too crowded, and the surplus must be broken out. Until the fruit buds have blossomed it is not well to prune more than is necessary to prevent crowding and promote uniform development, because the vine then needs all its energies to well set its fruit. In the cold grapery at the critical season of blossoming, cool or rainy weather may occur, and with all our care in withholding water and excluding cold drafts, may prevent the more tender Muscats from setting berries thickly, hence these bunches are loose and need but little thinning. This year, the vines having become established and more mature, may bear from five to seven clusters in the strongest spurs, according to size of bunch. Remove promptly all the others. But if the fruit becomes soft and feels cold cut it off at once. It shows the vine is overcropped, and if allowed to remain will impair vitality and cause future unfruitfulness. It sometimes happens from forgetfulness and detention, that the house has not been seasonably opened and the temperature becomes very high, threatening scorching. It may be partially obviated by immediately sprinkling the ground and gradually admitting air. When certain sorts swell fast, previous to ripening, they crack badly. This may be partially counteracted by suspending sprinkling, by increased ventilation, and by allowing the terminal laterals to grow and appropriate sap. The vinery is intolerant of neglect. It needs constant vigilance to furnish the proper temperature,

moisture and sustenance. To achieve success requires daily patient industry to adapt means to ends and appropriate practice to the varying seasons. It demands careful study, reflection and wise judgment to assist and co-operate with nature in all her beneficent vital processes and functions, but experience proves that in a cold grapery, even in northern Maine, all the varieties named, with good treatment, may mature their fruit without rust, rot, shriveling, shanking or mildew. And the sight of the vines loaded with clusters of beautiful golden, rose colored, purple and black grapes, and their luscious flavor, unsurpassed in the most favored climes, will repay all the necessary trouble and labor.

The presentation of Dr. Weston's valuable and interesting paper, was followed by a brief discussion, which was participated in by President Gilbert, Messrs. Crosby and McLaughlin of Bangor, Sawyer of Wiscasset, and others. Owing to the necessity of an early adjournment, the discussion was very meagre, and is therefore not reported.

The President presented the following kindly and characteristic letter from Mr. Calvin Chamberlain :

FOXCROFT, January 12, 1874.

Z. A. GILBERT, ESQ:—

My Dear Sir: Your invitation to aid in the work to be done at the coming meeting of the Pomological Society, was duly received, and I have given it some thought during these days of delay to reply to your kind attention.

When Dr. Holmes called for help to organize such a Society thirty years ago, I went over to meet him, and happened to be the only one who responded to the call, whose home was more remote from Augusta than is Winthrop. I feel that there is now as much need of a good, live organization with such a name and object, in our State, as a few of us then felt. I would like to be with you at your meeting, but when I think how much care and will-power it required to keep me on "this side of Jordan" last winter, and of my economic programme for the present one—to be within hail of the house and barn—I cannot go so far away. And then, my dear Sir, how could I venture to put myself on paper, hastily, in any of the ways you so thoughtfully suggest. If I was possessed of that ruling ambition which is shown in the venerable and good M. P. Wilder, I should be wading into all these places where good works are demanded. But the truth is, I have never been in condition to do things sufficiently thorough to have my methods related for the instruction of others; and this being the truth, I do not like to see my name in type, standing in connection with subjects concerning which I have but crude ideas.

You have been thinking of grape culture in Maine. Perhaps you drop this fruit after reading about the "Concord" by its worshipper; and decide to not "fool away your money" on such grapes as may be grown above the isotherm of Fitchburg. But we farmers and gardeners who happen to live in Maine, and cannot or do not choose to leave it, must be amused during our short summers; and if it is any comfort to any of us to plant any kind of grape and to eat the ripe fruit thereof annually, I hope our Massachusetts friends will still grant us so small and innocent a pleasure.

From the success that has already attended the trial of early American grapes, we may reasonably hope, in the immediate future, to see grapes mature in all parts of the State, where Indian corn ripens in average seasons. We find native vines bearing fruit on the banks of the rivers north of the 45th parallel and five hundred feet above tide water. Then why not plant the better early varieties in sheltered gardens?

Grape vines grow and bear abundantly almost without care or method, will endure under adverse conditions, and survive under much foolish manipulation. When you are generating your next clap of thunder, please use any ideas you may have brought away from my grounds to enforce any point of advice or encouragement to those who ought to plant vines. General directions can be condensed into ten minutes in a garden, or a few plain words.

Begin by planting in a dry soil, well drained naturally or artificially; a common kitchen garden or a good corn-field is rich enough. Train a vine spirally three times around two stakes, drive a nail and tie the vine with a string. During summer pinch off the ends of branches as they grow beyond the limits you assign to it. After the leaves fall in autumn, prune it, cut loose from the stakes, press it down to the ground in a coil around the stakes; cover lightly with strawy manure or potatoe tops or evergreen boughs. Put it up in April or May. Or plant vines on the east or south side of a bank wall, or board fence, training the vine horizontally within three or four feet of the ground. Set a few stakes to support it, or set up a simple frame and let your vines form for you a shady garden arbor; or let a vine spread itself over your doorway or in front of your piazza. Plant out twenty kinds, some in each of the positions above indicated, and in each coming year plant other varieties.

Such is the advice I would have you give concerning grapes; for there is no fruit that gives quicker or more constant returns, none so flexible for embellishment about a home; none that gives more satisfaction during the growing season, or at its termination in the final utilitarian balance. Go on, my dear Sir, in the way you have indicated. Enlist all the young men in the good work, and we old 'uns at our firesides or under our vines and trees will put up our best wishes for the greatest good to attend your efforts—for you personally, and for all the people—financially, physically, æsthetically, through all time.

Believe me, your obedient servant,

CALVIN CHAMBERLAIN.

Voted, That the subject of Grape Culture be held open for further consideration at the next meeting.

Votes of thanks were passed to Mr. Goodale, Judge Gilbert and Dr. Weston, for their valuable papers presented at this session; to the railroads of the State for the courtesy of free return tickets; and to the newspapers of the city and State for the gratuitous publication of the programme and proceedings, and after a few minutes spent in social intercourse the Convention adjourned without day, thus closing the record of a most successful, harmonious, and, it is believed, useful session.

REPORT ON THE EXHIBITION OF FRUIT AT THE WINTER MEETING.

BY Z. A. GILBERT, *President of the Society.*

In the call for the winter meeting it was announced that there would be an exhibition of fruit for the purposes of study and comparison, and all having choice specimens, especially of new or rare varieties, were invited to contribute samples.

The propriety of bringing together on this and similar occasions the well known standard varieties of fruit for "purposes of study and comparison" may not be apparent to all, yet when the fact is taken into consideration, that many people who grow more or less fruit, especially apples, and many consumers who are not producers, cannot distinguish our common varieties, the propriety of presenting them for their inspection on all proper occasions will at once appear.

This invitation called out a very creditable collection, not only of several of the newer and less known varieties, but also many choice samples of standard fruits, and also several varieties of local distinction. Among the samples exhibited, the following are worthy of notice :

Joseph Taylor, of Belgrade, contributed a large number of varieties of the leading winter apples grown in the State. The specimens were large, perfect, and in fine condition. Among them was the King of Tompkins County, a showy apple of excellent quality, which has not yet been extensively tested in this State.

Z. A. Gilbert, of East Turner, presented many of the leading varieties of winter apples.

Henry Ingalls, Esq., of Wiscasset, and Mr. Lowell of Augusta, presented apples for name which were grown on trees labelled as "Baldwins." They could not be named by any fruit grower present.

Richard Stuart, Stuart's Hill, Palmyra, presented two new varieties of apples, named respectively "No Core" and "Cranberry." The former came from New Hampshire. Mr. Stuart says that "from its great productiveness, rich flavor, small amount of waste, and hardness, he considers it 'A No. 1,' among some forty varieties grown in his orchards." The specimens shown were less than medium size, very long from calyx to stem, color green ground splashed with dull red. Flesh tender,

juicy and crisp, nearly solid in the core, with pleasant, mild, acid flavor. General appearance not attractive.

The Cranberry apple was a very pretty bright red apple, quite small (a note accompanying them stated that the specimens were under size), pleasant flavor, and said to be hardy and a prolific bearer.

Mr. B. C. Nichols, of Searsport, forwarded specimens of a winter apple which is extensively cultivated and very popular in Waldo County, known as the "Naked Limbed Greening." Its merits have been discussed at some of the meetings of the Board of Agriculture, and frequently presented to the public for several years past through the columns of the *Maine Farmer*. There has also been considerable discussion as to its origin, some parties asserting that it is a western fruit introduced here many years ago, and of which the true name has been lost. But whatever may be the facts as to its origin and name, there can be no doubt that it is a valuable variety in that portion of the State where it is principally grown, and perhaps equally so in other sections where it has been, to some extent, disseminated.

Unfortunately the samples forwarded by Mr. Nichols were frozen in transportation, so that their quality could not be tested, hence the accompanying letter giving a detailed description of the tree and fruit (corresponding substantially with the descriptions heretofore published) is reserved till such time as the Society shall have the means of passing its judgment upon the fruit.

Of pears there were but two varieties shown—Josephine de Malines, by Samuel Rolfe, Esq., of Portland; and Lawrence, by George B. Sawyer, of Wiscasset. Mr. Rolfe says he considers the Josephine de Malines as among the best winter pears—its keeping qualities are unsurpassed. With him it is productive. The books speak of this variety as hardy.

Of grapes, Geo. B. Sawyer showed seventeen varieties of native and six of foreign grapes, all in good condition. With a list of the names of the several varieties, Mr. Sawyer, by request, appends conclusions drawn from his experience:

Native grapes—*Rogers' Hybrids*, Nos. 3, 4, 9, 15, 19, and *Salem*—all hardy and productive, and splendid keepers. *Perkins* and *Clinton*, worthless. *Israella*, of no value, and *Eumelan* not much better. *Iona*, good, but late. *Creveling*, prolific and early. *Delaware*, always good, but has some faults. *Diana*, too late for open air—fine under glass. *Adirondac*, apparently good, but

needs further trial. *Concord* and *Isabella*, both late and not of the best quality.

Foreign grapes shown were the Black Hamburg, Muscat Hamburg, Red Chasselas, White Muscat, Chasselas Musque, Early White Chasselas.

Much interest was manifested in the fruit by all who were present, and none appeared reluctant to test its qualities for desert, when an opportunity was given. It is to be hoped that hereafter this feature of the winter meetings will receive more attention, and that time will be taken for full discussion of varieties.

ON THE KEEPING OF FRUIT.

BY GEO. E. BRACKETT, OF BELFAST.

[The following paper, designed for presentation at the Winter Meeting, (though not strictly connected with any subject assigned for consideration,) was omitted for want of time.—G. B. S.]

The State of Maine is undoubtedly specially adapted to the raising of some kinds of fruits, prominent among which is the apple, which seems to be particularly suited to our soil and climate and grows to perfection upon our rolling uplands and our rocky hillsides. In no other State in the Union can better apples be grown. California may produce monstrosities in size, but they lack flavor; other States may grow larger and more beautiful specimens, but they lack solidity, and soon decay, and New York, and the other New England States may raise as good apples but they cannot surpass us, for in flavor, solidity, and the keeping qualities, Maine grown apples may well challenge the world.

I do not propose to write an essay upon the apple or its cultivation, but to refer briefly to the question of its preservation after it is grown. It is said that it is a good thing to earn money but a better thing to know how to take care of it; so it is a good thing to know how to raise apples but as good or a better thing to know how to save them or keep them sound and fair until wanted for the table or the market. Of course as apples are a perishable crop, I do not mean to refer to keeping them longer than the following crop is harvested, but to keeping them in good, sound, fair, saleable condition until late in the spring and early summer, when they are scarce and consequently bring high prices. And of course I refer only to the winter varieties, Baldwin, Greenings, and allied sorts.

One of my neighbors who has made apple orcharding the practical study of a lifetime, and who has at least twenty-five acres in bearing trees, raising from one to two thousand bushels of apples annually, has explained to me his process of preparing, preserving and keeping his fruit for market, which I think worthy of being generally understood.

His apples are harvested when fully ripe, being carefully picked from the tree separately, by hand, and placed in small baskets, so as to guard against bruises as much as possible, and special care is exercised in handling them throughout. At the approach of cold weather they are placed in huge bins in the house cellar, where they remain until wanted for market. The windows of the cellar are so arranged as to open and close easily, and when the weather admits, air is kept constantly changing, fresh and new supplying the place of the old. By means of thermometers the temperature is kept at from two to four degrees above freezing, when possible, but pure air being an essential element.

This, in a word, is his system of keeping apples, and the result through a long period of years has been all that could be desired. He loses but a small per cent. by decay, and his apples are as solid, crispy and juicy in June and July as in the previous January. He markets no No. 1 winter varieties until spring or early summer, and consequently obtains the highest prices.

Some six or eight hundred bushels of Baldwins kept in this manner last winter were taken from the cellar the last of June and first of July and shipped to Southern ports, where they sold for \$2.00 and \$3.00 per bushel. They were solid and in an excellent state of preservation when barrelled, and were sound and in good condition on their arrival at Savannah.

My friend's theory is that the disease, or rotting and decaying of apples, is due largely to miasma in the air of the cellar where they are stored, and if this can be driven out and the atmosphere purified by currents or the admission of pure and fresh air from without, the disease is avoided or stopped.

The principal causes of the rotting and decay of apples come from without and are not constitutional, if I may so term it. The skin is the apple's protection against disease. If the skin is broken and the pulp or flesh exposed to the air, certain chemical changes immediately take place and disease or decay fastens upon it. The air is the great transporter of vegetable diseases—parasitic plants it may be, whose minute spores or organs of produc-

STATE POMOLOGICAL SOCIETY.

tion are floating free, and fasten upon any life, vegetable or animal, where the conditions are favorable for its reception and growth. A warm, humid, stagnant atmosphere is favorable to its propagation and growth, and a cool, pure, moving air the reverse, hence follows the deduction. Some parasitic plants or diseases even fasten themselves upon the skin of the apple, and under favorable circumstances enlarge, spread over the surface, and, piercing the flesh with minute rootlets, the whole soon becomes a decaying mass of vegetable matter, upon which a dozen varieties of sporadic plants are feasting.

As temperature at the freezing point puts an end to all vegetable growth, so an approximation not sufficient to injure the apple will surely conspire to prevent the spread of vegetable disease or the growth of microscopic plants. The spores will fail to attach and germinate, or may be killed outright by the low temperature.

But this question of plant diseases opens up an inexhaustible subject, of which smut in grain, black-knot on trees, and the potato disease are prominent examples.

I only proposed to present the experience and theory of a successful orchardist for your consideration.



APPENDIX.

ACT OF INCORPORATION.

STATE OF MAINE.

IN THE YEAR OF OUR LORD ONE THOUSAND EIGHT HUNDRED AND SEVENTY-THREE.

An Act to Incorporate the Maine State Pomological Society.

Be it Enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION 1. Z. A. Gilbert, George W. Woodman, A. L. Simpson, George B. Sawyer, J. C. Weston, Charles Pope, Samuel Rolfe, James A. Varney, Albert Noyes, Rufus Prince, J. C. Madigan, S. F. Perley, Hannibal Belcher, J. B. Phillips, Joseph Taylor, Harvey Counce, John Currier, William Swett, Henry McLaughlin, Calvin Chamberlain, Washington Gilbert, George O. Weston, Hiram Chase, J. C. Talbot and S. L. Goodale, their associates and successors, are hereby constituted a corporation for the promotion of fruit culture, by the name of THE MAINE STATE POMOLOGICAL SOCIETY.

SEC. 2. Said society shall have all the rights, privileges and powers conferred by the laws of this State upon county and local agricultural societies, and shall be subject to all liabilities imposed by existing laws upon such societies, so far as the same are applicable to the objects of this society; but the bounty to be paid by the State to said society shall not exceed the sum of five hundred dollars in one year.

SEC. 3. Said society shall have power to elect such officers, and adopt such by-laws and regulations, not inconsistent with the laws of this State, as may be necessary to carry into effect the objects of the society.

SEC. 4. The first meeting of said society may be called by A. L. Simpson, J. C. Weston and Geo. B. Sawyer, by a notice signed by them, stating the time and place of said meeting, to be published two weeks successively in the Maine Farmer, the last publication to be seven days at least before the time of said meeting.

SEC. 5. This act shall take effect when approved.

[Approved February 17, 1873.]

BY-LAWS
OF THE
MAINE STATE POMOLOGICAL SOCIETY.

AS AMENDED JANUARY 29, 1874

ARTICLE I.—MEMBERSHIP.

SECTION 1. Any person may become a member of this Society by signifying his wish to do so and paying to the Treasurer the sum of one dollar.

SEC. 2. Any person may become a life member by paying the Treasurer the sum of ten dollars; and the Treasurer's certificate thereof shall entitle such member, with his wife and minor children, to admission to all the exhibitions of the Society.

SEC. 3. Each member (excepting life members,) shall pay to the Treasurer an annual fee of one dollar; and the Treasurer's certificate thereof shall entitle him to admission to all the exhibitions of the Society for that year.

SEC. 4. Any member who shall neglect, for the term of two years, to pay his annual assessment, shall cease to be a member of the Society; and the Treasurer shall erase his name from the list of members. Any member may, at will, withdraw from the Society on giving notice to the Treasurer, and paying the amount due from him to the Society.

SEC. 5. Ten members shall constitute a quorum.

ARTICLE II.—OFFICERS.

SECTION 1. The officers of the Society shall consist of a President, two Vice Presidents, Secretary, Corresponding Secretary, Treasurer, and an Executive Committee, consisting of three members exclusive of the President and Secretary, who shall be members *ex-officio*, and one Trustee for each county in the State; all of whom shall be elected by ballot at the annual meetings, and hold their respective offices during the calendar year for which they shall be elected, and until their successors are elected. In the event of a failure to elect the said officers, or any of them, at such meeting, an election shall be held at the next meeting of the Society duly called and holden.

SEC. 2. All the officers shall perform the customary duties of their respective offices, and such further duties as are herein specified or shall from time to time be imposed upon them.

SEC. 3. The Secretary shall keep a true record of the proceedings of the Society and of the Executive Committee, keep an alphabetical list of the members, and make all reports required or authorized by law.

SEC. 4. The Corresponding Secretary shall conduct the correspondence of the Society. He shall open and maintain correspondence with other Pomological and Horticultural Societies for the purpose of effecting an exchange of publications with the same, for the permanent use of this Society; and shall present at each annual meeting, a report, embracing a review of the proceedings of such Societies, and the substance of all such matters therein as he shall deem to be of special interest to this Society.

SEC. 5. The Treasurer shall keep all moneys of the Society and disburse the same only upon the written orders of the Executive Committee. He shall render his accounts annually to the Executive Committee, and give such bond as said Committee may require. He shall keep a record of the names of the members of the Society, and shall from time to time transmit to the Secretary the names of all new members and of such persons as have ceased to be members.

SEC. 6. The Executive Committee shall have the general management and oversight of the affairs of the Society; transact its business, and appoint all standing and special committees, when not otherwise provided for; examine the accounts of the Treasurer, and make an annual report to the Society, of their doings and of the financial affairs of the Society.

SEC. 7. The Trustees shall represent the Society and act as its agents in their respective counties. They may receive applications for membership, and forward the same, with the fees therefor, to the Treasurer, and shall promote the interest of the Society in their respective counties.

SEC. 8. Whenever the office of President shall become vacant, the Vice Presidents shall succeed to his office, in the order of seniority, for the remainder of the year; and any vacancy occurring in any other office may be filled by appointment by the Executive Committee; the person so appointed holding the office for the remainder of the year.

ARTICLE III.—MEETINGS.

SECTION 1. The Annual Meeting of the Society shall be held at the place and during the time of the Annual Autumn State Exhibition, and such notice thereof shall be given as the Executive Committee shall direct. If, from any cause, the regular Annual Meeting shall not be held as above provided, a special meeting shall be held at Augusta in the month of January next following.

SEC. 2. Special meetings may be called at any time by the Executive Committee; of which meetings each member shall be notified, by a notice properly directed and deposited in some post office at least ten days prior to the time of such meeting.

ARTICLE IV.—FUNDS.

The fees for life membership shall constitute a permanent fund, to be safely invested by the Treasurer under the direction of the Executive Committee, and of which only the interest shall be used for the disbursements of the Society.

ARTICLE V.—AMENDMENTS.

These By-Laws, except Sec. 2 of Article 1, may be altered or amended at any annual meeting of the Society, by the concurrence of two-thirds of the members present, *provided, however*, that Article 4 shall not be so amended without notice given and entered on record at the preceding Annual Meeting.

TREASURER'S REPORT FOR THE YEAR 1873.

CHARLES S. POPE, *Treasurer*, in account with the *Maine State Pomological Society*.

DR.		
To cash received of life members	\$140 00	
“ “ annual members.....	73 00	
“ “ for sale of tickets at the annual exhibition.....	516 50	
“ “ for fruit sold at auction.....	72 00	
“ “ on loan.....	300 00	
		<hr/> \$1,101 50
CR.		
By paid John Martin, for services in sale of tickets.....	\$15 00	
“ G. B. Sawyer, for record books, printing, &c.	61 57	
“ State Agricultural Society, on account of sale of tickets....	258 25	
“ J. A. Varney, expenses as member Executive Committee,	15 00	
“ Z. A. Gilbert, “ “ “ “	43 41	
“ G. B. Sawyer, as Secretary and expenses as member Execu-		
“ tive Committee.....	63 45	
By paid C. S. Pope, Treasurer, for books, stationery and expenses..	19 95	
“ Henry McLaughlin, sundry expenses of exhibition.....	121 86	
“ J. S. Ricker & Co., for use of dishes, &c., at exhibition....	19 00	
“ S. S. Kilburn, for seal and expenses on same.....	16 35	
“ Interest on loan.....	8 20	
“ Premiums awarded at annual exhibition.....	457 00	
By cash on hand.....	2 46	
		<hr/> \$1,101 50
(Amount of premiums due and payable, \$59.00.)		

C. S. POPE, *Treasurer*.

REPORT OF THE EXECUTIVE COMMITTEE FOR THE YEAR 1873.

To the Members of the Maine State Pomological Society:

The Executive Committee hereby report that they have examined the account of the Treasurer, for the year ending December 31, 1873, and find the same to be correctly stated and properly vouched.

They have drawn orders on the Treasurer during the year to the amount of \$1,257.31, in payment of the following items, viz :

For expenses incidental to the organization of the Society.....	\$9 50	
Record books, stationery and seal.....	36 28	
Printing by-laws	20 00	
Printing for annual exhibition.....	116 59	
Incidental expenses of annual exhibition.....	403 18	
Expenses of officers.....	131 36	
Postage, telegraph and express bills	16 20	
Payment of premiums.....	516 00	
Payment of interest on loan.....	8 20	
		<hr/> \$1,257 31

None of the officers have received any compensation for their services, but only remuneration for actual expenses; and the Committee know of no demands outstanding against the Society, except as hereinafter stated.

The financial condition of the Society on the 31st day of December, 1873, was as follows :

RESOURCES.

Cash in the treasury.....	\$2 46
Amount due from the State.....	500 00
Entry fees and returned and forfeited premiums, estimated.....	30 00
	<u>\$532 46</u>

LIABILITIES.

Amount due and payable for premiums.....	\$59 00
“ of orders drawn and unpaid.....	99 27
“ due First National Bank of Wiscasset, on loan.....	300 00
	<u>\$458 27</u>
Balance, being net assets.....	74 19

There is due from the Society to its Permanent Fund, for Life Memberships, the proceeds of which have not yet been invested the sum of \$140.00.

The Committee have not included in the above statement of resources, the fees for membership of the persons named as members in the Act of Incorporation, or made such by election at the first meeting; some of whom have not yet paid the fee, (which was established afterwards) but it is presumed that they will do so.

Respectfully submitted, by order of the Executive Committee.

GEO. B. SAWYER, *Secretary*.

AUGUSTA, January 29, 1874.

MEMBERS OF THE SOCIETY.

Including all names registered up to January 29, 1874.

[(L.) indicates Life Members.]

NOTE.—Changes of residence or errors should be promptly reported to the Secretary.

A.

Adams, Loren.....	East Wilton	Atherton, W. P.....	Hallowell
Allen, C. F.....	Orono	Atherton, H. N.....	Hallowell
Abbott, Lyman F.....	Wilton	Atkins, Charles G. (L.).....	Bucksport
Atwood, Fred.....	Winterport	Abbot, H. G.....	Vassalborough

B.

Belcher, Hannibal.....	Farmington	Bailey, S. D.....	Bath
Boardman, Samuel L.....	Augusta	Brackett, George E.....	Belfast
Burr, Benjamin A.....	Bangor	Blaney, Arnold.....	Bristol
Burr, T. W.....	Bangor	Bearce, Chandler.....	Bristol
Bliss, Hiram Jr.....	Washington	Brightman, Benjamin F.....	Bristol
Bailey, B. C.....	Bath	Bell, James B.....	Augusta

C.

Counce, Harvey.....	Thomaston	Crosby, William C. (L.).....	Bangor
Currier, John.....	Waldoborough	Chamberlain, David.....	Bristol
Chamberlain, Calvin.....	Foxcroft	Chapman, C. D.....	Orrington
Chase, Hiram.....	Belfast	Clapp, Charles Jr.....	Bath
Colburn, Horace.....	Windsor	Carpenter, James M.....	Pittston
Carr, Albert C.....	East Winthrop		

D.

Dennison, A. L.....	Portland	Duncan, W. C.....	Bath
Dunham, D. M.....	Bangor	Davenport, Charles.....	Bath
Duncan, George W.....	Bath	Dill, Seward.....	Phillips

E.

Emerson, Albert (L.).....	Bangor	Elliott, John S.....	Bath
Emerson, John.....	Howland		

F.

Foster, S. G.....	Wilton	Flint, George.....	North Anson
Farrington, J. R.....	Orono	Fuller, A. J.....	Bath
Farrington, Henry.....	Waldoborough		

G.

Gilbert, Z. A.....	East Turner	Gray, Edwin.....	Starks
Gilbert, Washington.....	Bath	Greenwood, Charles M.....	South Anson
Goodale, S. L.....	Saco	Getchell, I. E.....	Winslow
Gilbert, Henry A.....	East Turner	Garland, Herbert M.....	Bangor
Glidden, Oakman F.....	North Whitefield	Godfrey, John E. (L.).....	Bangor

H.

Hayden, William D.....	Madison	Hoffses, Elmus.....	Waldoborough
Harlow, S. C.....	Bangor	Hight, B. M.....	Skowhegan
Hubbard, Wales.....	Wiscasset	Hitchcock, J. P.....	Bath

I.

Ingalls, Henry (L.).....			Wiscasset
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J.

Jellison, C. T.....			Lewiston
---------------------	--	--	----------

K.

Kimball, J. H.....			Bath
--------------------	--	--	------

L.

Lang, J. W.....	Brooks	Lowe, Charles D.....	West Hampden
Lovejoy, H. F.....	Winthrop	Low, Elijah (L.).....	Bangor
Lucas, L. L.....	St. Albans	Low, David P.....	Bath

M.

McLaughlin, Henry (L.).....	Bangor	Marrett, A. W.....	Standish
Madigan, J. C.....	Houlton	McLellan, Charles H.....	Bath
Marble, S. S.....	Waldoborough	Mallett, E. P.....	Bath
Moore, J. E.....	Thomaston	Moses Oliver.....	Bath
Millett, E. C.....	West Minot	Mower, Oliver.....	Greene
Moore, Asa W.....	North Anson	Morton, Leander.....	Bristol

N.

Noyes, Albert (L.).....	Bangor	North, James W.....	Augusta
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P.

Pope, Charles S.....	Manchester	Parkhurst, E. E.....	Maysville
Prince, Rufus.....	Turner	Percival, Warren.....	Vassalborough
Perley, S. F.....	Naples	Perham, Sidney.....	Paris
Phillips, J. C.....	Dedham	Pope, Jacob.....	Manchester

Prington, Elisha.....	Madison	Page, A. G.....	Bath
Pike, N. R.....	Winthrop	Perkins, Charles J.....	Bath
Place, W. S.....	Charleston	Patten, James T.....	Bath
Preble, George A.....	Bath	Patten, John.....	Bath
Percy, D. T.....	Bath	Payne, William E.....	Bath

R.

Rolfe, Samuel.....	Portland	Rice, William.....	Bath
Reed, Edwin.....	Bath	Roberts, B. M.....	Bangor

S.

Spaulding, Benjamin.....	Angusta	Smith, Samuel E.....	Wiscasset
Sherburne, C. S.....	Prospect Ferry	Simmons, H. J. A.....	Waldoborough
Simpson, A. L.....	Bangor	Small, William H.....	Alna
Sawyer, George B., (L).....	Wiscasset	Smith, Alfred.....	Monmouth
Swett, William.....	South Paris	Swanton, John B.....	Bath
Shaw, J. E.....	West Hampden	Sewall, William B.....	Bath
Smith, Lewis C.....	West Hampden	Sewall, E.....	Bath
Spaulding, Calvin.....	Hallowell	Sewall, Arthur.....	Bath
Stetson, Isaiah (L).....	Bangor		

T.

Taylor, Joseph (L).....	Belgrade	Tilton, William S. (L).....	Chelsea
Talbot, J. C.....	East Machias	Tobie, E. P.....	Lewiston

V.

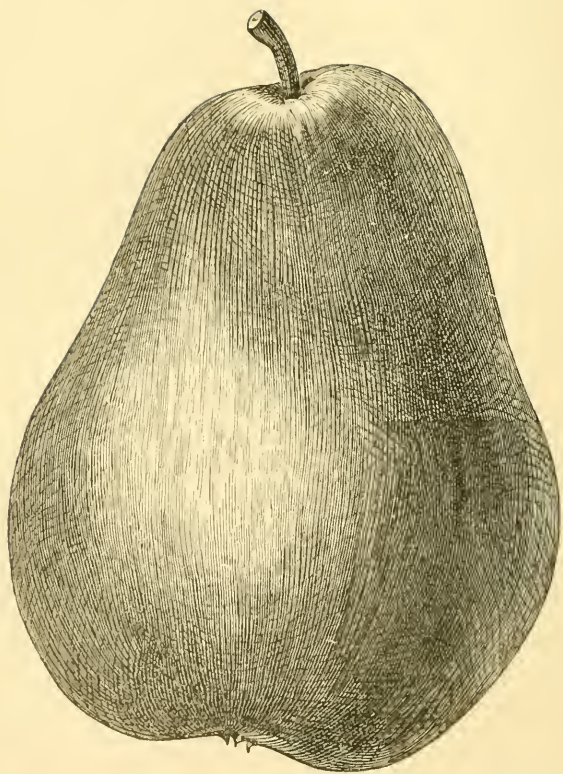
Varney, James A.....	North Vassalborough
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W.

Woodman, George W. (L).....	Portland	Wasson, Samuel.....	East Surry
Weston, J. C. (L).....	Bangor	Wakefield, A. G.....	Bangor
Weston, George O.....	Madison	Whitecomb, A. C.....	North Whitefield
Winslow, Lyman H.....	Nobleborough	Wakefield, J. W.....	Bath

Total, 136 members; all resident within the State, and representing the several counties, as follows, viz : Sagadahoc, 29; Penobscot, 24; Kennebec, 21; Lincoln, 18; Somerset, 9; Androscoggin, 7; Cumberland, Franklin and Waldo, 5 each; Hancock and Knox, 3 each; Aroostook and Oxford, 2 each; Piscataquis, Washington and York, 1 each; (14 Life Members.)

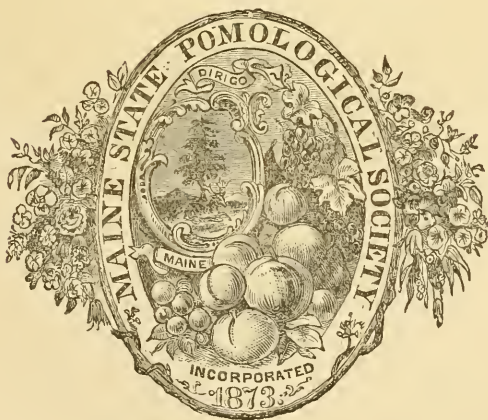




The Goodale Pear.

SECOND ANNUAL REPORT
OF THE
SECRETARY
OF THE
MAINE STATE POMOLOGICAL SOCIETY,
FOR THE YEAR
1874;

Also Embracing the Transactions of the Winter Meeting and Fruit Growers'
Convention, held at Augusta, January 20th and 21st, 1875.



AUGUSTA:
PRESS OF SPRAGUE, OWEN & NASH.
1875.

“—— This is an art
Which does mend nature—change it rather, but
The art itself is nature.”

—SHAKESPEARE.

INTRODUCTORY NOTE.

This, the second annual report of the transactions of the Maine State Pomological Society, is presented in the full belief (on the part of the undersigned) that its contents will meet the expectations and merit the careful consideration of the Society and the public.

It differs from its predecessor, in containing less of generalization and more of practical, specific detail—less of my individual work and more of the results of the work of the Society and its committees. In this connection the Catalogue of Fruits for the State, the descriptive list of apples, and the valuable report of the Corresponding Secretary, contained in this volume, are worthy of special attention.

My own part in the preparation of this report has been chiefly editorial, and my acknowledgements are due to the several persons who have taken part in the preparation of the matter herewith presented, for their promptness and courtesy.

G. B. SAWYER.

WISCASSET, March 6, 1875.



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MAINE STATE POMOLOGICAL SOCIETY.

Officers and Committees for the Year 1875.

PRESIDENT,

Z. A. GILBERT, EAST TURNER.

VICE-PRESIDENTS,

GEORGE W. WOODMAN, PORTLAND,

A. L. SIMPSON, BANGOR.

SECRETARY,

GEORGE B. SAWYER, WISCASSET.

CORRESPONDING SECRETARY,

DR. J. C. WESTON, BANGOR.

TREASURER,

CHARLES S. POPE, MANCHESTER.

EXECUTIVE COMMITTEE,

The President and Secretary, *ex-officio*; SAMUEL ROLFE, Portland; JAMES A. VARNEY, North Vassalboro'; HENRY McLAUGHLIN, Bangor.

TRUSTEES.

Rufus Prince, Turner, Androscoggin Co.; J. C. Madigan, Houlton, Aroostook Co.; S. F. Perley, Naples, Cumberland Co.; Hannibal Belcher, Farmington, Franklin Co.; C. G. Atkins, Bucksport, Hancock Co.; Henry Taber, Vassalboro', Kennebec Co.; Elmas Hoffes, Warren, (P. O. Waldoboro'), Knox Co.; H. J. A. Simmons, Waldoboro', Lincoln Co.; Dr. A. L. Hersey, Oxford, Oxford Co.; Albert Noyes, Bangor, Penobscot Co.; Calvin Chamberlain, Foxcroft, Piscataquis Co.; Washington Gilbert, Bath, Sagadahoc Co.; Geo. O. Weston, Madison, Somerset Co.; J. W. Lang, Brooks, Waldo Co.; William Freeman, Jr., Cherryfield, Washington Co.; S. L. Goodale, Saco, York Co.

STANDING COMMITTEES.

On Apples and Pears.—S. L. Goodale, Saco; S. N. Taber, East Vassalboro'; Ira D. Fish, Patten; Henry Ingalls, Wiscasset; Nathan Rogers, Troy.

On Grapes, Cherries, Plums and Small Fruits.—Henry McLaughlin, Bangor; Dr. J. B. Bell, Augusta; Dr. Eliphalet Clarke, Portland; E. P. Tobie, Lewiston; H. G. O. Alden, Belfast.

On Catalogue of Fruits for Maine.—Z. A. Gilbert, S. L. Goodale, Henry McLaughlin.

Maine State Pomological Society.

TRANSACTIONS FOR 1874.

At the close of another year, it becomes my pleasing duty, in obedience to the requirements of the laws of the State, as well as in accordance with the by-laws and usages of the Society, to present a statement of the Transactions of the Maine State Pomological Society during the second year of its existence, together with the various details called for by the statute.

The work of the first year, including the winter meeting of January 1874, was of a preliminary character, and devoted chiefly to organization, the laying out of work for the future, and to devising means for the accomplishment of specific objects and for running the machinery of the Society with the least possible expense and friction. As the results of this forethought we commenced the year now closed with a harmonious and efficient organization, and with well defined plans not only for the year but for future years; and close it with the satisfaction of having entered in earnest upon the pursuit of the objects for the promotion of which the Society was organized, and of having accomplished as much as could reasonably have been expected from the means and instrumentalities within our reach; and though without great financial success, (which was never expected,) yet without pecuniary embarrassment.

There has been no perceptible diminution of interest on the part of the members of the Society; the intercourse between the members and officers and between the Society and other organizations and individuals, in business affairs and in relation to the great common interest of agriculture, has been cordial and harmonious.

The membership of the Society has not increased to that extent which is essential to its fullest efficiency. This is unfortunate for the pomological interests of the State, in that it prevents the full realization of the Society's plans, the accomplishment of which

requires correspondents and observers in every town; and besides, when a work which requires the coöperation of many is attempted by a few it must necessarily be done imperfectly. "In the multitude of counsellors there is safety."

Among the objects which the Society has prominently in view are the following: To develop and systematize the pomology of the State,—to fix reliable and standard lists of varieties of fruits adapted to the different sections, by the aid of which the beginner may avoid the loss of his time and money in planting unsuitable varieties upon the recommendation of itinerant venders,—to ascertain and disseminate the knowledge of the principles and processes essential to successful cultivation,—to develop the capacities of the State to raise not only its own fruit, but its fruit trees also, affording a surplus of both for exportation instead of *importing* vast quantities of each as at present,—to obtain and publish accurate annual statistics showing the condition and progress of this important interest, and finally to do away with that feeling of exclusiveness and conceit which still obtains to some extent among fruit growers, and substitute in its stead a universal desire to promote each others' welfare, so that while there shall ever be among fruit growers a healthy and generous emulation there shall also be more frequent and friendly consultation, a closer union and better fellowship. "*There is that scattereth and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty.*"

The flattering reception accorded to the first volume of the Society's Transactions, the eagerness with which it was sought for and read, the favorable notice which it received from the press and people of the State as well as from agricultural journals and distinguished pomologists abroad,—have greatly encouraged the Society in its efforts during the past year, and furnished unmistakable evidence that the results of its labors are appreciated and being utilized by large numbers of people.

Having given in the annual report for 1873, a detailed account of the origin and organization of this Society, and, as introductory thereto a brief outline of the history of orcharding in Maine, together with the Society's Transactions up to and including the winter meeting held at the State House in Augusta, in January, 1874, it will be my purpose in the following pages to state, briefly as possible, what has been done by the Society during the past year so far as its transactions are of general interest, omitting

unimportant details and asking especial attention to the valuable addresses, essays and reports which have been made, as well as to the catalogue of fruits of Maine (which is herewith first submitted to the public in a full and authentic form,) and to the descriptive lists following the same. The financial statements and other matters relating more particularly to the business affairs of the Society will be appended.

It is worthy of observation in the first place, that in consequence of the efforts of the Society, a new and deeper interest has been awakened throughout the State in the business of fruit growing, both in the orchard and nursery. Improved varieties of fruits and better methods of culture than formerly prevailed are being eagerly sought for; worthless or unprofitable varieties and cultural methods of doubtful utility have in many instances been discarded; more numerous and better exhibitions of fruit have been held than in any previous year; and the discussion of the various questions connected with fruit culture, both in the farmers' meetings and in the newspapers has been more general, more intelligent and more practical than ever before.

It is especially gratifying to note that in the current agricultural literature of the State so large a space has been filled with original and well written articles on pomological and horticultural subjects, and that the larger and better portion of those articles have been contributed by members of this Society. It is observable also that those cultivators and writers who still hold themselves aloof from the Society, whether commending or criticizing its efforts, have unavoidably shared in the new impulse which has been given. If the Society had accomplished no *specific* work its utility would have been demonstrated by these general results.

CATALOGUE OF FRUITS FOR MAINE.

The most important portion of the labor of the Society during the year has been devoted to the preparation of a catalogue of the varieties of fruit adapted to profitable cultivation in the State. At the Winter Meeting in January, 1874, a committee was appointed to whom this duty was especially assigned. That committee have assiduously prosecuted their work, making extended personal observations and seeking information by means of circulars and otherwise from all available sources. Their report as presented at the recent Winter Meeting and modified by the action of the Society will be found on subsequent pages. It

should be borne in mind that this is but an initial step, and as the American Pomological Society, with twenty-five years' experience and commanding the best talent of the ablest pomologists in America, finds it necessary to revise its catalogue at each biennial session, so it is expected that the catalogue herewith presented will be open to correction at future meetings of this Society. Still, it is believed that it will be found for the present a safe guide, and that parties following its recommendations will not materially err.

EXPERIMENTS AND OBSERVATIONS

upon new varieties of fruits, and varieties not previously tested in particular localities, have been instituted to some extent, without expense to the Society, with a view to determine their adaptability to this State, or to the different sections of it. This has been done chiefly by the exchange of scions between the members and with similar societies in other States, through the facilities afforded by the mails. If the Society should see fit in the future to prosecute this important branch upon a more extensive scale and in a more systematic manner, the results cannot be otherwise than valuable.

THE CORRESPONDENCE OF THE SOCIETY

with societies of a similar character in other States and countries and with individuals, in relation to matters of general pomological interest is placed by the by-laws, as amended in January, 1874, in the charge of the Corresponding Secretary; and the Society is fortunate in having as the incumbent of that office, a gentleman of large horticultural experience, thorough culture and sound and discriminating judgment. His first annual report forms an interesting and valuable part of this volume. It is the expectation of the Society by this means to obtain an annual *résumé* of whatever is new, interesting or valuable in the horticultural and pomological literature of the country, and to obtain, by the system of exchanges already instituted, the published reports and transactions of all such societies for ultimate preservation in its

LIBRARY,

for the formation of which measures have been taken during the past year; and which is designed to include all standard works and current publications on the subjects above mentioned. Dona-

tions to the Library have already been received from several publishers, exchanges have been effected to some extent with other societies, as before stated, and by the aid of the present and former Secretaries of the Board of Agriculture, and some other gentlemen, a nearly complete set of the agricultural reports of our own State has been secured—some of these being very rare and difficult to obtain.

EXHIBITIONS.

There is nothing in the nature of such purely æsthetical exhibitions as this Society can with propriety undertake, calculated to render their frequent recurrence pecuniarily profitable by attracting large crowds of paying spectators. The territorial extent of the State is so great as to render it impossible to hold a general exhibition at any given point without great expense both to the Society and to a majority of the individual members attending.

Under these conditions, we have been obliged to relinquish for the present at least, the idea of holding frequent exhibitions during the summer and autumn months for specific purposes, which is successfully carried out by many societies, and to adopt the best possible compromise by holding our exhibition in each year at such a time as to include our most important productions in a good degree of development, without entirely excluding the others. This indicates the latter part of September as being the time at which, in average seasons, the best general exhibition of fruits and flowers can be made in this State. It unfortunately compels us to forego the exhibition of the important classes of small fruits ripening in summer, and which are grown in large quantities with success in many parts of the State,—an omission which it is incumbent on the Society to find means to correct at an early day.

At the winter meetings of the society, also, specimens of fruits are brought together, not so much for the purpose of exhibition as to afford an opportunity for the study and comparison of those varieties which are in perfection at that season.

In accordance with the principles above indicated, the Executive Committee met at Portland on the 12th of June, and made arrangements for holding the

SECOND ANNUAL EXHIBITION

in that city on the 22d, 23d, 24th and 25th days of September, 1874, jointly with the Portland Horticultural Society.

At that time it was supposed that this exhibition would not interfere with those of other societies, (which interference, so far as the others had then been appointed, it was especially sought to avoid,) and that the time fixed upon would be late enough to enable us to make a full and fair exhibition of the principal autumn and winter fruits of the State, and early enough to allow a perfect and profuse display of the floral wealth of the State and especially of the city of Portland and its vicinity. With such expectations, and guided by the experience of our exhibition of the preceding year, at Bangor, and seconded by the enterprising and judicious officers of the Portland Horticultural Society, the Executive Committee felt themselves justified in making the most liberal and extensive arrangements for the autumn exhibition. The premium list of the preceding year was carefully revised, and greatly enlarged and improved by the addition of new and important features, the details of which will appear by reference to the following lists of entries and awards. The amount offered by the two societies was \$1,058.00, in addition to which several valuable special premiums were offered by individuals.

An abstract of the regulations adopted is here inserted as indicating in the most concise manner possible the intended character of the proposed exhibition and the purposes which it was designed to accomplish, omitting those which are unimportant in that connection.

1. All entries for premiums must be made before noon of the first day, and all fruits and flowers offered for premiums must be correctly named, and (except No. 1,) must have been grown by the competitors. Specimens offered for exhibition by others than the growers must in all cases have the name of the grower affixed, if known.

2. It will be the duty of the standing committees of the Society to examine labels and correct all errors in nomenclature during the exhibition.

3. Exhibitors must specify the premiums for which articles are entered, and all fruits offered for premiums must be composed of exactly the number of specimens, or quantity, named in the schedule.

* * * * * *

5. Grapes grown on girdled vines cannot compete for premiums.

* * * * * *

7. All contributors exhibiting plants, fruits or flowers, who desire a report of the same, must furnish a correct list thereof, blanks for which will be furnished by the Secretary.

* * * * *

9. No article will be entitled to a premium unless it possesses points of superiority.

10. The Committees are authorized to recommend gratuities for any new or rare fruits, flowers, plants, vegetables, or designs of merit for which no premiums have been offered.

In awarding premiums, adaptation to general cultivation will be deemed an indispensable requisite, but gratuities may be awarded for *superior* specimens of any good varieties, even though they may not flourish in all situations.

11. When a specimen is presented for a name, the exhibitor shall communicate all the information he possesses as to the origin and the local appellation.

* * * * *

13. No member of any of the Committees for awarding premiums shall, in any case, vote or decide respecting an award for which such member may be a competitor, or therein have an interest; but in such case such member shall temporarily vacate his place upon the Committee.

14. The Society's premiums are open for competition to all persons residing in the State; but when a premium is awarded to a person not a member of the Society, the fee for membership will be deducted from such premium.

The exhibition was held in pursuance of the original design, and though successful, and, under the circumstances satisfactory, it did not fully justify the expectations which were entertained at the outset. By a coincidence which was not discovered until it was too late to avoid it, the fair of the State Agricultural Society was held at Lewiston, on the same days. This was regarded by the officers of both societies, and by the people generally, as a misfortune, and it is one which it is confidently believed both societies will guard against in the future. It affected the Pomological Society adversely in preventing the attendance of a large number of persons who otherwise would have attended. It did not materially affect the character or extent of our exhibition.

We were unfortunate, also, in not being able to obtain from the managers of the principal railway leading from the interior of the State to Portland the concessions in respect to fares and transpor-

tation which from long established usage are expected on such occasions. The other roads and the lines of steamers centering at Portland made the most liberal provisions in this respect.

The public introductory exercises, necessarily deferred till the evening of the second day, consisted of the "opening address" by the President, and the "Society's Annual Address," which on this occasion was delivered by Hon. W. W. Thomas, Jr., of Portland, of both of which we are enabled herewith to present verbatim reports, deferring to subsequent pages the lists of entries and premiums.

OPENING ADDRESS.

By the President, Z. A. GILBERT, Esq., of East Turner.

The evolution of another year has again brought us together for the purpose of celebrating this the second annual exhibition of the Maine State Pomological Society. While our society represents the whole State, we find ourselves at this time associated with the Portland Horticultural Society—a society engaged in a work similar to that represented by us, older in years, yet somewhat local in its efforts and in its influence. Hand in hand do we at this time work, and here with our united strength have brought together the products of the orchard and garden and the gems of the conservatory, which you see displayed in the exhibition hall. Of the exhibition I need not perhaps speak further, than to say, that in extent and variety, in perfection and beauty of specimen it can but be satisfactory to the two societies represented therein, and also to the large number of visitors who have this day visited it, as well as to those whom we hope to welcome during the remaining days of its continuance. As a whole it speaks to you in words more eloquent, in sentences more gracefully drawn than any language of mine. Its influence we trust will tend to greater interest in the cultivation of fruits and flowers, and thus while our homes are rendered more attractive, our lives will be made purer and better. To this exhibition we welcome you all, and while you enjoy its beauty and variety, let your hearts and your minds be opened to its influence. While it delights the eye and satisfies the soul, let it also be your teacher, that you may go from here refined in spirit, elevated in your aims, purposes and aspirations,

improved in practical knowledge, and better fitted for the duties of life in which you are daily engaged.

Sure as the sunlight of the morning to the natural world is the yearly banquet of fruits and flowers to the cultivator. Annually is it spread, varied only that our labors may never weary and our interest never wane. With faith we plant the seed and prune the vine; with intense interest watch the growth of the plant and the development of the fruit. Did you ever think how your interest would be abated were success always certain—were there no drawbacks and disappointments,—with how much less earnestness and less perseverance your efforts would be pursued did success unbounded always crown your efforts? Yet the annual banquet is always served, and the disappointments and discouragements, buried at the time, are resurrected to greater enjoyments and to a higher appreciation of the works of the Creator. Thus by the obstacles we meet are we made to enjoy the success which follows, and are irresistibly spurred on in our efforts to beautify and adorn the earth on which we live, and thereby render it more enjoyable to our fellow man.

Our mission we believe to be a worthy one. All are ready to acknowledge the influence of the cultivation of fruits and flowers on our higher natures. As they are with certainty annually given to us, so are they as sure to exert a refining and elevating influence upon our higher faculties, leading us from the grosser tendencies of our natures to a higher and a better life. No one can be daily engaged in the cultivation of such offerings as have been placed upon those tables, and at the same time walk with the low and degraded in his moral and spiritual nature. We see evidence of this on every hand. We prove it in the bearing and deportment of those who visit our exhibition. Without fear of being open to accusations of unjust egotism we say that we feel proud of every individual who has enrolled himself as a member of our society. With equal safety may we point to the high moral standing of those not on the list of members, who have so generously contributed to make this exhibition what we now see it.

While we never should lose sight of the influence of our exhibitions, we should remember that all the influence we hope to exert, all the good we hope to work out, is not wrought through a display of the productions we would foster and encourage. Highly as we value the æsthetic influence of horticulture and floriculture, we must bear in mind that the greatest influence comes through

the highest success. Hence we must labor to disseminate knowledge, as well as awaken enthusiasm, since we know that through knowledge success is achieved. We also know that man cannot live on the beautiful alone. Attention then must be given to material prosperity. Our labors must not then be directed altogether in any one channel, but must be diverted into all the channels where we would make our influence felt. While through our exhibitions we reach a goodly number of those whom we would benefit, yet far more do we and shall we reach through the printer's art. Operating from this stand-point, in addition to coming before the people through the newspapers of the day, our society at the close of the first year of its existence issued a printed report of its proceedings for the year. This was sent out in the faith, that though a quiet worker and a silent teacher, it would have a mission of usefulness more extended than the echo of the voices which gave utterance to its contents. We hope to make it more useful in future issues.

While speaking of our labors the question arises, whether we as a society, laboring for the cause we represent, shall take up, as we have, some of the more important questions relating to fruit culture, and hammer upon them year after year, till we see tangible results of the efforts put forth, or whether we shall annually broadcast new seed in the faith that some will fall on good ground and in due time bring its increase. Without wishing to establish a precedent in this matter, we cannot forbear at this time brief allusions to certain points relating to questions presented to the consideration of the Society last year.

While wishing to encourage the amateur in a due degree we must nevertheless for the time pass him by to present the *profits of extensive planting*. He who plants extensively and makes the business a specialty, gives to it that thought and attention necessary to success in any direction. *Planting fruit trees as an investment* may to many be a new idea, yet it is one deserving attention. All over the State are lands now of small value—the best of fruit lands—which, if planted out to apples and pears, would in a few years be so greatly increased in value by the growth of the fruit trees as to prove a better investment than any popular security in the market. Many cases have I been cognizant of where this was the case. All of you perhaps have read of the orchard planted by the late R. S. Pell of New York, who thought to plant a couple of thousand trees for his son, thinking if they brought an annual

income of only a single dollar apiece, that his son would thereby secure an income that would at least place him above want. He continued to plant till his orchard extended over two hundred acres, and himself realized a fortune therefrom. I would like to dwell upon this point longer, but can only present it for you to study in detail.

We must also give more attention to obtaining good fruit. Therein, more than in any other direction, do we find the profits. Also we must cultivate as a principal crop only those kinds from which we can obtain the desired results. In this direction there is great need of knowledge among the masses. Many are the discouragements arising from this cause alone. How many are now planting out crab trees, where a Porter, Nodhead or Hubbardston may as well yield its luscious fruit in vastly greater quantities? How many, too, are planting inferior kinds where the best may as well be grown? 'Tis our mission to diffuse information and correct such practices.

With a view to the preparation of a reliable list of fruits for Maine, at the winter meeting of the Society last January, a committee was raised to prepare a list which the Society can indorse. They now have the matter under consideration, and without doubt will in due time report.

Our nomenclature is sadly at fault, as any one may see who examines the labelling of the several collections of fruit on exhibition. This should not be, and the Society collectively and members individually should labor to correct the evil. We want to designate the different varieties of fruit by their correct names. To aid in doing this the Society early appointed standing committees of fruits among whose duties should be "correcting all errors in nomenclature." That duty has not heretofore been attended to, and at this exhibition is being entirely neglected. The Society should at once take measures which will lead to more desirable results.

While the Society can do but little perhaps in the way of testing new varieties, it can do something in the way of introducing new varieties which have proved of value in other sections, and the members can do much—and we have no doubt are willing to do it—in testing their value here. Let each member of the Society by arrangement with each other try but a single variety, and very soon much valuable knowledge would be gained. In doing this, as well as in all the transactions of the Society, we must use

proper precaution, that we are not made the advertising medium of interested salesmen.

Many other matters suggest themselves wherein we may labor for the promotion of the interests we represent, but they cannot now be enumerated. Nor should we endeavor to do too much at once. We must bear in mind that the whole field cannot at once be worked over and a ripened harvest spring like magic from the fallow. Patiently we must toil, and persistently, patiently wait. Let us do, if it must be one thing at a time, and do it well.

In our efforts thus far since our organization we have received the active coöperation of many interested individuals, and the best wishes of all with whom we have had intercourse. In behalf of the Society they have our thanks for the same. Especially are we indebted to the press of the State for the free use of their columns in presenting the interests of the Society to the reading public; and here we would say in closing, that such favors are duly appreciated. Gentlemen, may we work on earnestly, faithfully, hopefully.

THE ANNUAL ADDRESS.

By Hon. W. W. THOMAS, Jr., of Portland.

The first and greatest employment of man is agriculture. Upon it all else depends. The myriad wheels and spindles of manufacture await its products, the white wings of commerce bear them to the ends of the earth, and by them man is fed and clothed. Blot out agriculture and you blot out civilization, and reduce the human race to a few scattered tribes of savages, less enlightened than the American Indians at the discovery of this continent.

Agriculture is one of the chief pursuits of the people of our State. In Maine are sixty-one thousand farms, containing six million acres. These farms are valued at one hundred and five million dollars; the live stock upon them is worth twenty million dollars more, and their product for 1873—the agriculture product of Maine—is estimated at thirty-six and one-half millions. But large as are these figures, vast as are the products of our soil, proud as we all are, and as we all ought to be, of our good State, yet let us question, aye, faithfully question ourselves on this subject. Is agriculture in Maine to-day in a satisfactory condition? Are its methods the best and most advanced? Are the products of our farms, either in quantity or quality, what they

ought to be, what they might easily be made to be? And last and most, is there that keen, eager, wide-awake interest in farming on the part of the greater portion of our farmers themselves, which the merchant, the manufacturer and the shipper give to their callings and which is a condition indispensable to success?

These questions must all be answered No! and of this fact no persons are more painfully aware than the intelligent farmers of Maine themselves. Indeed, the lack of interest in the quiet and peaceful occupation of husbandry is the most serious obstacle in the pathway of the progress and prosperity of Maine. Look a moment at some of the results of this indifference and antipathy to agriculture! Our farming villages are not increasing in population, business or importance. Most of our farms, especially in the older counties, are worth no more and produce no more to-day than ten years ago. In some places adjoining farms, which twenty years gone by supported two families, are now carried on by one, with one set of buildings vacant, windows boarded up,—all lapsing to decay. The old school-house in the woods which twenty years ago rang with shouts of a hundred merry children when the tasks of the day were done, is replaced, perhaps, by a larger, more imposing, modern structure at the cross roads, but the children for whom the school-house is built have dwindled to a score.

And the youth of our State, where are they? Few indeed remain on the old homestead, to replace with the vigor of their young years the failing strength of the father and mother, who have reared them. They swarm like bees from parent hives, and betake themselves to our larger towns, our cities and to the broader fields of the great West, too often, we have good reason to fear, to live on the husks they would have scorned at home; yet for all this seldom do they exhibit the good sense of the prodigal son, and return to their father. The exodus of the sons of Maine is so large that the remark "you find Maine men in every State in the Union," has passed into an adage. In most cases they are men of whom we may well be proud; men who are leaders in society, politics and business; men, who calling into action the vigor gained on our rocky hills, and in our northern clime, have contributed in large measure to the development and prosperity of the communities in which they live.

Now this may be a gain to our nation, considered as a whole, it is most assuredly a gain to these new communities; but what is

their gain is our loss, and we must look at this question as men of Maine, from the stand-point of our own State. But some cautious people say, "This condition of things is all true, and we regret it as deeply as any one, but is it prudent to admit the existence of such untoward circumstances even to ourselves?" I think we have pursued this prudent policy full long enough, a policy about as prudent it seems to me, as that of the ostrich, which thrusting her head into the sand, believes no one can see her. Evils, I am sure, are half overcome when we fairly and squarely admit their existence and full magnitude and danger, for then, not till then, can we confront them; then only can we seek out and apply the remedy.

Is there a remedy for the decline in the farming districts of Maine? I believe there is, and that it consists chiefly in this: *in making farming more profitable and more attractive*, since surely it is in quest of something more profitable or more attractive that our young men and maidens have deserted our farms. The line of our effort then is plain. What shall we do in this line? How can we make farming profitable and attractive? What are the best, surest and simplest means to this end? What methods will be attended with the most lasting and beneficent results? These are among the most important questions now pressing upon us. These are questions for you agriculturists of Maine to answer. This problem is especially your own; and it is to you that the State looks for a practical and satisfactory solution.

Gentlemen, if we can believe the signs of the times, you have already commenced to solve this problem. You have begun to apply the principle of coöperation, so potent in other industries, to farming. As proof of this I cite the many cheese factories and dairy associations which have sprung into existence all over our State within the last two years. Indeed, one of the chief labors of our Legislature last winter, seemed to be the incorporation of these very associations. A goodly number of these factories are now in active operation and are proving sources of wealth to the districts in which they are located. Our farmers are also beginning to discard some of the old time crops which many seem to raise from force of habit, and without regard to whether they are profitable or not; and to turn their attention to those products, especially of the garden and orchard, which command the quickest sale and the highest prices. I say our farmers are *beginning* to do this, and I use the term advisedly; for it is only here and there a

farmer is to be found who devotes his time, capital and energy to those crops which yield the largest and surest returns.

And one of the brightest of these signs of the times, which point to the progress of our agricultural interests, is the association of these advanced farmers — of yourselves, gentlemen — into the “Maine State Pomological Society,” a society whose efforts are directed to increasing the amount and quality of the cultivated fruits adapted to our State, and therefore, necessarily to increasing the profits of farming. Only second to you is the honored Horticultural Society of Portland, an association of gentlemen of this “beautiful city by the sea,” who have found time in the midst of the pressing and wearing cares of business to make their gardens a little paradise of fruits and flowers; thus setting a valuable example of beauty and thrift, which has been felt and followed, not only in Portland, but throughout the county of Cumberland.

It is therefore a pleasure, a great pleasure to me gentlemen, to meet with you at this annual gathering; for your meetings, your consultations, your discussions, all tend in the right direction—to the good of our beloved Commonwealth. And your exhibition—this brilliant display of fruit and flowers—is beautiful and luscious enough to impress the stranger with the belief that they were plucked in the garden of Eden, and to incite our own citizens in friendly emulation, to plant and set out the best varieties of trees and shrubs, and cultivate them in the best manner, that in future exhibitions they may equal, and perchance excel, in some varieties at least, the magnificent specimens of the exhibition of 1874.

We have seen that one of the greatest blessings we can confer upon the State, is simply to make farming more profitable and more attractive. To enlarge and improve the orchard and garden are the best means to this end. And it is for this you are met together; this is the meaning of your societies, your meetings, and this exhibition. Every well wisher to his State, wishes well to you; for if he who causes two blades of grass to grow where but one grew before is a benefactor to his race, most surely are those benefactors who cause fruit to ripen and flowers to bloom, where all was waste or little worth before. And it was this feeling, gentlemen,—my good wishes for your good societies—that betrayed me into the indiscretion of addressing you; for I could not find it in me to refuse your request, though so poorly fitted by the education and work of my life, to instruct or advise ex-

perienced orchardists, horticulturists or farmers. And these good wishes of mine are my only excuse for being here on this occasion—an excuse which I hope you in your charity will deem sufficient; for I thought that though I might neither instruct nor advise, yet if I could say a timely word to prove more clearly to you the importance of the cause in which you are embarked, and the consideration in which you yourselves, and your efforts are held by men of other pursuits and callings; if in a word I could give you a hearty *God speed* in your honorable endeavors, I should not have spoken altogether in vain.

My personal knowledge of orcharding is small indeed, and is limited to a single experiment. In the spring of 1871 I found nineteen young apple trees in a store in the frontier village of Caribou in Aroostook county. They were the unsold remnants of a stock of trees, which the store-keeper had disposed of, and presented a somewhat scraggly appearance. I ascertained that they were Crabs and Duchess of Oldenburg, and further that the latter variety had been improved from the Crab at a comparatively recent period. There were two facts about these trees—all were hardy—all were northern. These facts were conclusive; for though I knew but little about pomology, I knew I wanted trees to stand a hard, northern climate. I bought the trees for a trifle—they being a left over lot—and my friend and co-laborer, Mr. Jacob Hardison, and I lashed them on our backs, and mounting our horses, rode in with them through the woods, in a storm of sleet and rain to New Sweden.

We set out the trees in a clearing on the public lot, where the primeval forest grew the year before, enclosed them with a fence of cedar logs, kept the weeds away, and now and then threw around them a liberal supply of dressing. The result is that every tree lived and flourished, and this year many have blossomed and give good promise of fruit. Another result followed, and this was the one I had hoped for; the Swedes, seeing these trees live and thrive, bought and set out apple trees of the hardier varieties, and to-day on a large number of the clearings of our Swedish settlement are the respectable beginnings of orchards.

Now this sole experiment of mine illustrates a fundamental fact in pomology. A fact which must be known to you all, but which nevertheless can not be too often repeated and dwelt upon. The fact is this. Plant those trees and only those that are adapted to the climate and soil of your farm. If you follow this precept,

it is true, you have done but little towards a flourishing orchard, since the price of a good orchard like the price of liberty, is "eternal vigilance"; but it is equally true, that if you do not follow this precept your orchard will be a failure from the start, and no amount of after care, culture and thought can possibly make a success of it.

Let us remember, too, that the climate of Maine is a hard climate, and the soil in general a hard soil; that we produce hardy horses, hardy cattle and hardy men and women, too, and that the fruits adapted to our State are the hardy varieties.

The fruit that flourishes best in Maine is the apple. This is fortunate, for the apple is the most valuable and important of fruits. Whether we regard the amount and value of the crop, the facility with which it is raised, the extensive portion of the globe adapted to its culture, its fitness for transportation, the length of time it may be kept, or the variety of uses to which it is put, the apple stands forth among fruits like iron among metals—King.

From the earliest times the apple has held this proud position. Surely nothing but an apple could have enticed mother Eve to her ruin. It was a golden apple, inscribed "To the Fairest," that the goddess Discord threw into the banquet of the gods, and this apple was the cause of dissensions between Juno, Minerva and Venus, which shook high Heaven; hence the Trojan war, the destruction of Troy, and those immortal poems the Illiad and the Odyssey. And when great Jove, father of gods and men, wedded Juno, Queen of Heaven, Tellus goddess of the Earth, brought the choicest product of our world to the nuptials, as a wedding gift—and this choicest gift of Earth was what?—branches bearing the golden apples of Hesperides.

The labor question is one of prime importance to the farmers of Maine. Intelligent, reliable labor at fair wages is one of the greatest needs on the farms of our State. Farmers of Maine, is there anything more difficult to obtain than good help in the house, or a good hand in the field, at wages you can afford to pay, or for that matter, even at wages you cannot afford to pay? Why, a young farmer said to me, the other day, that it was not half as hard to get a wife as it was to get a good servant girl.

The inventive genius of America which has produced our improved agricultural implements, helps us in part out of this difficulty. And our mowing, reaping and threshing machines, our

horse-rake and tedder, horse-hoe and pitchfork, subsoil-ploughs and cultivators, enable one man to do the work of many. Still, the difficulty, in great measure remains, and stares us in the face to-day—the great need of trustworthy labor at fair wages on the farms of Maine.

The course for our farmers to pursue, then, is clearly this, to raise those crops which give the largest returns with the least amount of manual labor. The products of the orchard and garden are these very crops. Experience proves this so satisfactorily that it needs no argument.

As a single illustration I point to the town of Cape Elizabeth, a town that has become rich within a score of years, in great part from vine fruits and garden vegetables; although its farms are being continually drained of their laborers by the demands of our shipping, fisheries, manufactories and the varied inducements and attractions of the city of Portland.

But while admitting that valuable products may be raised in the garden and orchard with comparatively little labor, it may be objected that these crops require great skill, calculation and perseverance. True! But are we not Yankees? Are we not Maine Yankees? Are not these qualities,—skill, calculation perseverance—the very ones on which we plume ourselves? Let us put them into practical operation among our fruits and vegetables. The old saw has it, “Calculation is better than hard work.” Let us try the truth of this on our farms.

What is the condition of our orchards to-day? A drive through almost any section of our State will convince us that it is far from satisfactory. The number of thriving young orchards, though increasing, is still limited; on many farms the old natural fruit trees of our grandfathers are the only ones to be seen; in some places most of these are dead and gone, and the few survivors, standing with decayed trunks and withered branches serve chiefly as monuments to mark the spot where once an orchard existed. The result is, that in some years Maine does not raise apples enough for her own consumption, but is compelled to import them from the new and distant State of Michigan. This too, when there is no State in our Union, and, I believe, no spot on the globe, better fitted by soil and climate for apple culture than the State of Maine.

Apples raised in southern climes are corky and tasteless, while those grown on our rocky hills and tossed by our northern blasts

are nearly perfection in juice and flavor. In this the apple but illustrates a universal law of nature. The farther north anything can be successfully raised, be it fruit or grass, or grain or cattle, or horses or men, the stronger, firmer, hardier and better the crop will be. And this is a good law for the inhabitants of hardening New England to reflect upon, at least before emigrating to the enervating southwest.

In increasing the orchards of Maine, we need not fear that their products will overstock the market. Apples can easily be sent from any portion of the State to Portland, and Portland is so situated that it commands the markets of both England and America. Our railroads and lines of coast-wise steamers give us direct and intimate communication with all business centers of our own country, while during six months of the year two first-class ocean steamships will hereafter leave our port every week for England. These ships commence their trips in November, the best time for the exportation of our fruit.

In 1872 the apple crop of Maine was one of unusual abundance, and a single dealer in our city, William Allen, Esq., shipped to England five thousand barrels of apples. The entire export was somewhat greater, and from it our fruit-growers received twenty thousand dollars. The Maine apples are highly esteemed in England, and every barrel sent out one year, will create a demand for ten the next, and the English market is comparatively unlimited. The best varieties for export are the Baldwin and the Russet.

Great care should be taken in packing. Use fresh, new barrels; pack the bottom row of apples in regular circles, one inside the other, stems down. This is the end that will be opened, and this mode of packing will cause the apples to present a fair and regular appearance. Of course no Maine farmer need be told that this top row must not be deaconed. Shake the apples well into place as you fill up the barrel; moderately round them up on the top, and screw down the head with the Ames barrel header. This is a screw advantageously adapted to pressing barrel heads into place, costs but a trifle, and is the best machine for the purpose. Apples packed in this way will be kept firmly in place, and can be transported without any danger of being bruised.

It would be well for apple growers to sort their fruit into three grades. Use No. 3 entirely for cider or feeding out to cattle. No. 2 should comprise the medium qualities, and No. 1

the sound, smooth fruit, entirely free from worm holes and blemishes. The export and sale of the apple will be largely facilitated if packers will establish these grades and adhere honestly to them. A large fruit dealer in our city informs me that he willingly gives twenty-five to fifty cents a barrel extra for apples grown and packed by the Messrs. Perley of Naples and Bridgton, because their fruit is known, and the quality can be relied on; and that he never thinks of opening a barrel of their apples for inspection any more than he would a barrel of granulated sugar.

May we not reach this high standard for all Maine apples? Then No. 1 or No. 2 apples of any variety could be sold by the hundred or thousand barrels, without further inspection, precisely as No. 1 and No. 2 mackerel are sold.

The freight on apples from Portland to Liverpool is fifty cents per barrel; from Boston seventy-five cents, and from New York one dollar, all in gold. This gives Portland an advantage of twenty-five cents a barrel over Boston, and fifty cents a barrel over New York; an advantage we surely should appreciate and improve.

Gentlemen, whether we take into consideration the general importance of fruit culture, its relation to the labor question, the adaptability of Maine to many varieties, especially the apple, the profit of the crop, the unlimited market open to us, or the charm which the orchard and garden throw around the farmer's cottage, we are alike convinced that your work is one of great value to yourselves, and of significance to Maine, especially at this present time, when apples are imported into this apple State. I hope and believe, that the garden and orchard of every pomologist and horticulturist present will be a model for all the country round about his residence; and that each will help on the good cause in his community.

But this isolated, individual action is not sufficient. Man is a social being. "In union is strength." Our State needs your united, concerted action. You, yourselves, need the stimulus of these meetings, discussions and exhibitions, where the wrong is corrected, the right strengthened, and where the experience of each becomes the property of all.

The State, and yourselves, gentlemen, need just such societies as you have formed. I bid you grow not weary in well doing, but go on until our farm-houses are surrounded by tasteful gardens, and embowered with choice and well kept fruit trees; until Maine

takes her true position as the great apple growing State of our country; until the apple becomes one of our leading exports and sources of wealth, and until a goodly portion of our young men and maidens stand by the farm, and find pleasure and profit on the old homestead.

There is enough to do in Maine to call into fullest activity the energies of every son and daughter of the Pine Tree State. Maine is a State of imperial resources. Develop these, and Maine becomes an empire State.

The decade ending in 1870, was indeed a dark period; then, for the first time in her history Maine lost in population. The outlook is brighter now. A valuable stream of immigration has begun to flow in upon us; the principle of co-operation is being advantageously applied to farming; your own labors are making our farms more pleasant and profitable places to dwell upon; our quarries of slate, lime and granite—the very cliffs of our rock-bound State—are proving inexhaustible mines of wealth; our rivers, leaping from the lakes to the ocean, with the power of a million horse, no longer run all wild and free, but are fast being harnessed to the wheel; and the ships of Maine, ships whose timbers are cut in our forests, and whose keels are laid on our coast, plow every sea, and bear the flag of the republic to the shores of every commercial nation on the globe.

Sons and daughters of Maine, let us work and pray here, on the soil where we were born, near the graves of our sires, by the hearth-stones of our childhood, surrounded and cheered by the friends and scenes of our youth,—and surely God will bless us and the Commonwealth.

THE ANNUAL MEETING

of the Society, for the transaction of business, was held on the afternoon and evening of Thursday, (Sept. 24,) pursuant to the requirements of the By-Laws. The list of officers elected for the ensuing year appears in another part of this report. It was voted that the annual reports of the Treasurer and Executive Committee should be presented at the winter meeting.

Voted, That the thanks of the society be tendered to Hon. W. W. Thomas, Jr., for his address at the present annual exhibition, and that he be presented with a certificate of life membership.

Voted, That the thanks of the Society be tendered to the Portland Horticultural Society and the citizens of Portland, for their generous coöperation and assistance during this exhibition.

Voted, That the thanks of the Society be tendered to the press of the city for courtesies extended.

Voted, That the thanks of the Society be tendered to the Boston and Maine, Grand Trunk, Portland and Rochester and Portland and Ogdensburg Railroads, Portland and Bangor and Lake Sebago steamers, for reduction of fares to the exhibition.

Voted, That the thanks of the Society be tendered to the mayor and city government of Portland, for the facilities afforded for holding this exhibition.

An invitation was presented by the Portland Horticultural Society to this Society to partake of a fruit supper at Reception Hall on Friday evening, which was accepted.

Adjourned to meet at Augusta on the third Tuesday of January 1875.

THE FRUIT SUPPER.*

"One of the most pleasant episodes of the exhibition was the fruit supper tendered by the members of the Portland Horticultural Society to the members of the Maine Pomological Society. The tables were set in Reception Hall, and were loaded with a profusion of the choicest fruits and flowers of the exhibition as well as those contributed by the owners of the best gardens in the city. There were one hundred and twenty-five plates laid upon two tables running lengthwise of the hall, and one running across the east end and extending to some distance beyond the others, forming buttresses at the corners.

At half-past eight the Portland Society and their guests took seats about the tables. T. C. Hersey, Esq., President of the Portland Society, called upon Hon. George T. Davis to preside, who on taking the chair called on Rev. J. A. Varney of North Vassalboro' to invoke the Divine blessing, after which Mr. Davis invited those about the tables to partake of the fruit before them. A half hour was devoted to this part of the programme. Mr. Davis then rose, and as he did so the company collected towards the part of the hall where he stood, to listen to one of the most eloquent, instructive and genial speeches it was ever our privilege to listen

* Condensed from the reports published in the Portland daily papers.

to. Mr. Davis noted the growth of fruit culture in Massachusetts and Maine, saying that in 1812 the Massachusetts Horticultural Society's catalogue embraced but four varieties of pears. Mr. Davis then proceeded to speak of the influence of the culture of fruit and flowers upon those who engage in it. At their conclusion, the remarks of Mr. Davis were warmly applauded.

Z. A. Gilbert, Esq., of East Turner, President of the State Society, was next called upon. His remarks were devoted principally to the growth of apple culture in the State. He closed by warmly thanking the Portland Society and Portland gentlemen for their generosity and courtesy to the Society he represented.

T. C. Hersey, Esq., noted the growth of fruit and flower culture in Portland. In 1859, he said, there were but two graperies and two green-houses in the city; now there were scores. He thought that the tide was again setting towards the farms in Maine. Formerly young men from the country left the farms for the city, but now city young men are going to Maine farms. He could name ten young men from Portland who had taken farms in Maine within a year or two. He thought the State should be more liberal towards agricultural societies.

Hon. W. W. Thomas, Jr., was called upon by Mr. Hersey. After a few humorous remarks respecting his knowledge of agriculture, Mr. Thomas proceeded to notice the varied resources of Maine, and closed his interesting remarks by urging upon Maine people the duty of honestly standing up for the good old State.

Dr. J. C. Weston, of Bangor, said that whatever reputation he had obtained as a fruit culturist was due to the interest awakened in the subject by the Portland Horticultural Society, years ago, when he practiced medicine in this city. Dr. Weston also gave some very interesting reminiscences and facts in relation to the Bangor Horticultural Society.

Hon. George F. Talbot was next called on. He said he always had had a taste for horticulture and fruit culture, but had never had opportunity to gratify it. He hoped, however, that some time in the future, in the world beyond, those forbidden to gratify such pure inclinations in this life, would have broad acres and ample leisure. Mr. Talbot noted the fact, that despite our short summers, we had before us perfect fruits and flowers; more perfect than can be found in more propitious climates. He then fell back upon the apple as the best of all fruits. Early in the history of our race he felt that the apple got a bad name, but regained its

reputation when a ripe one fell and discovered to Newton the law of gravitation. His remarks were greeted with frequent applause.

Further remarks were made by George B. Sawyer of Wiscasset, Secretary of the State Society; Hon. John Lynch, Hon. G. W. Woodman, Henry McLaughlin, Esq., of Bangor, John Neal, Esq., Rev. Mr. Varney of North Vassalboro', and others.

On motion of Mr. Hersey, the thanks of the Portland Society was tendered to the Maine State Pomological Society for conferring upon our citizens the benefit of the exhibition.

Among the gentlemen present were Mayor Wescott, ex-Mayors Thomas, Stevens and Kingsbury, H. B. M. Consul Murray, Judge Goddard, Gen. Anderson, Messrs. H. P. Storer, P. H. Brown, C. P. Kimball, Daniel Emery, H. N. Jose, G. W. True, C. E. Jose, John Porteous, J. S. Bedlow, H. I. Robinson, H. W. Hersey, A. K. Shurtleff, E. H. Elwell, J. C. Proctor, S. B. Beckett, and many others."

DETAILS OF THE EXHIBITION.

The exhibition differed from that of the preceding year in being made up *entirely* of products of our own State, while the preceding one, at Bangor, embraced large collections of specimen fruits from the western and southern States. These foreign specimens are to be regarded as excluded in any comparisons which may incidentally be made between the two exhibitions, for the purpose of noting the progress of the Society, or the characteristics of the respective seasons as affecting the fruit product of the State.

The display of apples and pears was very extensive and complete, embracing the leading varieties cultivated, and well representing the different fruit-growing districts of the State. But it is worthy of note, that, owing to the backwardness of the season, the winter and late autumn varieties were not nearly as fully developed or as highly colored as those exhibited at Bangor a week earlier in the season of 1873.* In fact, the best growth and development of our winter fruits took place at a much later period than usual, and the later autumn weather was so favorable that the apple crop, when harvested, proved to be the largest for many years. It is believed that the yield of pears was somewhat less than in 1873.

* This peculiarity was more marked on and near the seaboard than in the interior; probably in consequence of the unusual prevalence of foggy weather and easterly winds in the first named section. The same causes doubtless led to the comparative failure of the open air grapes by rot and mildew in the shore counties. In some instances plums were similarly affected.

In respect to native grapes, the exhibition was as far inferior as was the production, in this State, to that of 1873. Foreign grapes were shown in great abundance and excellent condition. Plums were shown in considerable variety and of superior quality, but not equalling the exceptionally fine exhibition in this department at Bangor. I am not fully advised whether the difference was attributable to a less favorable season or to the location of the exhibition. Of the miscellaneous articles embraced in the schedule as being related to pomological and horticultural pursuits, there was a varied and interesting display. Garden vegetables introduced as a department of our exhibition this year for the first time, were represented by numerous and very choice specimens, mostly the product of Cumberland county.

The exhibition of cut flowers, flowering and foliage plants, shrubs, ferns, floral decorations, &c., exceeded in its extent, variety and brilliancy, our most sanguine expectations, and far surpassed any exhibition previously made in the State. It will be seen by reference to the list of entries that in addition to the numerous specimens and collections from the conservatories, gardens and green-houses of Portland and its vicinity, there were extensive collections from Bangor, Monroe, (Waldo county) and Winthrop, and creditable exhibitions from other distant points. Many elegant specimens were sent in for the decoration of the hall and not put upon the entry books.

In the centre of the hall was an elevated circular table covered with potted plants, &c., from the extensive green-houses of J. A. Dirwanger of Portland, and radiating from this in every direction were other tables, half of which were filled exclusively with plants and flowers, while on the others were about two thousand plates of fruit—the collections from the several counties being arranged separately. Still other tables around the sides of the hall were devoted to vegetables, rustic work, miscellaneous articles, and additional collections of fruits. The cut flowers, numbering not far from two thousand bottles, were placed on elevated racks upon the stage.*

The arrangement of the fruit by counties, was not only convenient and instructive, by affording the means for comprehensive

* Stereoscopic views, showing the arrangement of the hall from five different positions, were very successfully taken by Messrs. Dupee & Co., Photographers of Portland, copies of which were secured by many members as souvenirs of the exhibition, and a few copies remain in the hands of the Secretary for disposal.

examination and accurate comparison, but it was rendered necessary by the new and important features of the premium list, designed to elicit competition not only between the different counties but also between the fruit growers of each county separately. With this addition, and the insertion of a larger number of premiums for single named varieties, the general features of the premium list of the preceding year were retained. There was also the addition of the schedule for garden vegetables, as before stated, and a considerable enlargement of the miscellaneous department, together with several special premiums offered by individuals—of all which the details will sufficiently appear by the list of awards hereafter given.

ENTRIES.

The principal entries were as follows :

Joseph Taylor, Belgrade, general exhibition of apples, also specific collections of same, and single dishes, as follows : R. I. Greening, Baldwin, Northern Spy, Roxbury Russet, Hubbardston Nonsuch, Jewett's Fine Red, Porter, King of Tompkins County, Williams' Favorite, Yellow Bellflower and crab apples.

J. C. Taylor, Belgrade, general exhibition of apples.

George W. Woodman, Portland, twenty-two varieties of pears, as follows : Rosteizer, Seckel, Kirtland, Winter Nelis, Buffum, Goodale, Doyenne Boussock, Howell, Belle Lucrative, Louise Bonne de Jersey, Lawrence, Beurre Diel, Beurre d'Anjou, Swan's Orange, Sheldon, Bartlett, Clapp's Favorite, Vicar of Winkfield, Beurre Clairgeau, Flemish Beauty and Beurre d'Amalis; also several varieties of plums, apples and vegetables.

F. M. Woodward, Winthrop, twelve varieties of apples, viz : Somerset, Gravenstein, Paradise Sweet, Harvey, Hubbardston Nonsuch, King of Tompkins County, Baldwin, Seek-no-further, Maiden's Blush, Northern Spy, Red Astrachan, Moses Wood.

Alfred Smith, Monmouth, general exhibition of apples, embracing thirty or more varieties, also specific collections, and single dishes of substantially the same varieties as named in the collection of Joseph Taylor; also ornamental dish of fruit, and twenty varieties of pears, including Duchess d'Angouleme, Flemish Beauty, Glout Morceau, Louise Bonne de Jersey, Marie Louise, Vicar of Winkfield, &c.

Henry Ingalls, Wiscasset, twenty-two varieties of standard apples, twenty-six varieties of pears, several varieties of plums,

eleven varieties of foreign grapes, also native and hybrid grapes grown both in the open air and under glass. This was the most extensive of the amateur collections, embracing more classes of fruit than any other collection exhibited. The apples embraced in this were about the same as those named in collections before mentioned, with the addition of Alexander, Wagener, Minister, Mother, and some others.

Samuel Rolfe, Portland, twenty-four varieties of pears, as follows: Bartlett, Beurre Hardy, Seckel, Buffum, Howell, Fulton, Andrews, Beurre Diel, Belle Lucrative, Clapp's Favorite, De Tongres, Golden Beurre, Beurre Bachelier, Beurre Gris de Iliver, Doyenne du Comice, Beurre d' Anjou, Doyenne Sieville, Louise Bonne de Jersey, Marie Louise, Beurre Superfin, Beurre Lange-lie, Colmer de Aremberg, Beurre Clairgeau, and one unknown.

Atherton Brothers, Hallowell, general exhibition of apples and specific collections, embracing a great number of varieties, including the best native varieties and several promising seedlings of their own production.

G. B. Sawyer, Wiscasset, ten varieties of apples, ten of pears, and five of grapes, foreign and native.

G. W. Rich, Portland, three varieties pears, two of apples, also dahlias and autumn leaves.

Edward Gould, Portland, Bartlett pears, and four varieties of plums.

F. W. Ritchie, Winterport, general exhibition of apples.

S. S. Low, Bangor, seven varieties of plums, viz: Low's Seedling, Green Gage, Jefferson, Columbia, Prince's Imperial Gage, Washington and Coombs, also Clapp's Favorite pears.

Dr. J. C. Weston, Bangor, five varieties of pears, a dish of Lombard plums, and a very fine collection of foreign grapes.

S. C. Harlow, Bangor, an extensive general exhibition of apples with specific collections and single varieties. Z. A. Gilbert, East Turner, the same. J. C. Mower, Greene, the same. Loren Adams, East Wilton, the same. Albert Noyes, Bangor, the same, also several varieties of pears and fine collection of gladioli.

J. Pope & Son, Manchester, specific collections of apples.

Philip H. Brown, Portland, a great variety of bouquets, cut flowers, and green-house plants; collections of foreign grapes; tomatoes, peppers and egg plants.

George Jewett, Portland, thirteen varieties of pears.

J. Maxwell, Portland, ten varieties of pears, three of grapes.

H. P. Storer, Portland, ten varieties of pears, and a choice collection of plums and foreign grapes.

Andrew S. Sawyer, Cape Elizabeth, foreign grapes and vegetables.

J. B. Coyle, Deering, general exhibition of apples.

Patrick Duffey, gardener for Hon. J. B. Brown, Portland, exhibited a fine collection of green-house plants, cut flowers, and bouquets, also ten varieties of apples, ten varieties of pears, foreign grapes, and a great variety of vegetables.

Calvin Spaulding, Hallowell, fourteen varieties of apples, six of pears, and five of plums.

L. J. Perkins, Deering, thirteen varieties of pears, foreign grapes and apples.

Thomas Phillips, gardener for T. C. Hersey, Portland, ten varieties of pears, collections of foreign grapes, pot plants, roses and vegetables.

Henry McLaughlin, Bangor, twenty varieties of pears, eight varieties of apples, seedling pears "Eastern Belle" and "Indian Queen;" also, for Miss A. E. Hardy of Bangor, oil paintings of last named two varieties.

S. L. Goodale, Saco, general collection of apples and pears.

Mrs. Charles Stanley, Winthrop, floral designs, flowers and plants.

Mrs. A. B. Strattard, autumn and winter apples, three varieties of grapes, dish fruit, cut flowers, roses, asters, pansies, zinnias, phlox Drummondii, petunias, everlasting flowers, collection of flower seeds, &c.

Mrs. B. B. Farnsworth, Portland, everlasting flowers, 312 bottles cut flowers, pansies, stocks, pinks, zinnias, &c. (Amateur collection.)

Messrs. C. F. Bryant, J. Vickery and J. A. Dirwanger, florists, of Portland, each exhibited large collections of green-house plants, ferns, cut flowers, bouquets, &c.

Miss Mattie Colcord, Portland, ferns, flowers and floral designs, also, six varieties of fruit jellies. Mrs. W. A. Jackson, Portland, plants and flowers. A. M. Baker, Deering, Clapp's Favorite pears. J. G. Warren, Deering, Marblehead squashes. J. S. Bedlow, Portland, five entries of pears and plums. E. C. Andrews, Portland, pears. J. R. Thompson, Portland, plums. Albert Burns, Portland, plums. Mrs. H. Radford, Portland, roses. S. P. Balchelder, Deering, apples and pears. E. H. Elwell, Portland, five varieties

apples. Miss Mabel Elwell, basket of wild flowers. Charles E. Gould, Deering, cabbages. Mrs. Thomas Shaw, Portland, floral designs and ferns. Dr. E. Clark, Portland, grapes, apples and pears. G. W. Allen, Cape Elizabeth, collection of vegetables. Mrs. Mary Bryant, Portland, wax flowers. Miss Clara C. Chase, Portland, variegated English holly. Mrs. A. S. Sawyer, Cape Elizabeth, pansies. Mosès H. Hussey, North Berwick, four new varieties potatoes. H. I. Robinson, Portland, apples and pears. Mrs. N. W. Andrews, Portland, flowers and Wardian case. Miss L. Andrews, Portland, flowers and floral design. E. N. Perry, Portland, five varieties pears. Kendall & Whitney, Portland, vegetables. Milton Dyer, Cape Elizabeth, 7 varieties apples, and collection of vegetables. J. A. Varney, North Vassalboro', apples. J. Wilson, Cumberland, six varieties apples. J. M. Knight, Wiscasset, five varieties apples, two of pears. J. E. Gilman, Portland, cut flowers. Miss M. L. Pope, Manchester, rustic stand and ornamental dish of fruit. Charles S. Pope, Manchester, Hathaway's Excelsior tomatoes. Mrs. G. B. Sawyer, Wiscasset, bouquets. Andrew Osgood, Portland, plums. Miss Hattie Stanley and Mrs. Jennie Wilbur, both of Winthrop, bouquets of asters. George Barbour, Deering, apples. Mrs. E. Phinney, Portland, pinks. T. S. McLellan, Brunswick, seedling apples. John Hanscom, Saco, general exhibition of apples. C. H. Greene, Portland, fragrant myrtle. Jefferson Stubbs, Hampden, seedling pears.

SCHEDULE OF PREMIUMS AWARDED AT THE SECOND ANNUAL EXHIBITION,
1874.

CLASS I—*Apples.*

Entries for the following premiums were required to consist of five specimens of each variety exhibited :

Best general exhibition of apples from any county in the State, (not necessarily grown by the exhibitor), \$25, J. C. Mower, Greene; second, \$15, Atherton Bros., Hallowell.

Best general collection of apples, grown by the exhibitor, in Androscoggin County, \$10, Z. A. Gilbert, East Turner; Cumberland, \$10, J. B. Coyle, Cumberland; Franklin, \$10, Loren Adams, East Wilton; Kennebec, \$10, Atherton Bros.; Lincoln, \$10, Henry Ingalls, Wiscasset; Penobscot, \$10, S. C. Harlow, Bangor; Waldo, \$10, F. W. Ritchie, Winterport; York, \$10, John Hanscom, Saco.

Best general exhibition of apples, \$20, Z. A. Gilbert; second, \$15, Alfred Smith, Monmouth; third, \$10, Joseph Taylor, Belgrade.

Best twenty named varieties, \$15, Alfred Smith; second, \$12, S. C. Harlow.

Best ten named varieties, \$12, F. M. Woodward, Winthrop; second, \$8, F. W. Ritchie; third, \$5, J. C. Mower.

Best five named varieties of fall apples, \$8, J. Pope & Son, Manchester; second, \$5, J. Wilson, Cumberland; third, \$3, Atherton Bros.

Best five named varieties of winter apples, \$8, Joseph Taylor; second, \$5, Z. A. Gilbert; third, \$3, Mrs. A. B. Strattard, Monroe.

Best single variety of autumn apples, second premium, \$2, Calvin Spaulding, Hallowell.

Entries for the following premiums were required to consist of twelve specimens of each variety exhibited:

Best dish of Rhode Island Greenings, \$2, to J. C. Mower; Baldwins, \$2, Z. A. Gilbert; Northern Spy, \$2, Joseph Taylor; Roxbury Russet, \$2, Alfred Smith; Hubbardston Nonsuch, \$2, F. M. Woodward; Nodhead, \$2, Z. A. Gilbert; Gravenstein, \$2, J. C. Mower; Porter, \$2, Alfred Smith; King of Tompkins Co., \$2, F. M. Woodward; Somerset, \$2, same; Tallman's Sweet, \$2, Alfred Smith; Williams' Favorite, \$2, S. C. Harlow; Yellow Bellflower, \$2, G. W. Rich, Portland; seedling apples, (one variety), \$3, Z. A. Gilbert; Crab apples, \$1, Alfred Smith; collection of Crab apples, \$3, Albert Noyes, Bangor.

SPECIAL PREMIUMS.

By FRED. ATWOOD, dealer in Farm Implements, Winterport, Me.

For the best collection of apples, of not less than six varieties, twelve specimens each, grown by the exhibitor in this State, an Eagle Pruning Tool, (price \$4); not awarded.

By S. BOARDMAN & Co., Nurserymen, Rochester, N. Y.

For the best collection of Maine grown apples, one dozen plants of Agawam Blackberry; to J. Pope & Son. For the second best collection of same, one-half dozen plants, Agawam Blackberry, to F. M. Woodward.

By Z. A. GILBERT, President State Pomological Society.

For the handsomest dish of autumn apples of a single variety, and not less than one-half peck, one copy "Thomas' American Fruit Culturist," to J. A. Varney, North Vassalboro'.

By HENRY McLAUGHLIN, Bangor.

For the best selection of varieties of apples for home use, in succession, grown by the exhibitor, five specimens of each to be exhibited, arranged and labelled with reference to the order of succession, one copy "Downing's Fruits and Fruit Trees of America;" not awarded.

Awarding Committee.—Washington Gilbert, Bath; Loren Adams, East Wilton; H. N. Atherton, Hallowell; F. W. Ritchie, Winterport; C. G. Atkins, Bucksport; H. G. Abbott, North Vassalboro'.

CLASS II—Pears.

Entries for the following premiums were required to consist of five specimens of each variety exhibited:

Best general exhibition of pears, \$20, Samuel Rolfe, Portland; second, \$15, G. W. Woodman, Portland.

Best twenty named varieties, \$15, Henry Ingalls, Wiscasset.

Best ten named varieties, \$12, H. P. Storer, Portland; second, \$8, Thos. Phillips, gardener to T. C. Hersey, Portland.

Best five named varieties, \$8, Alfred Smith, Monmouth; second, \$5, G. B. Sawyer, Wiscasset.

Entries for the following premiums were required to consist of twelve specimens of each variety exhibited:

Best single variety of fall pears, \$3, Albert Noyes, Bangor.

Best single variety of winter pears, \$3, G. W. Woodman; second, \$2, George Jewett, Portland.

Best dish of Bartlett pears, \$2, Samuel Rolfe; Belle Lucrative, \$2, same; Beurre Hardy, \$2, same; Beurre Clairgeau, \$2, L. J. Perkins, Cape Elizabeth; Beurre Diel, \$2, George Jewett; Andrews, \$2, Samuel Rolfe; Clapp's Favorite, \$2, S. S. Low, Bangor; Doyenne Boussock, \$2, George Jewett; Duchess d'Angouleme, \$2, Alfred Smith; Flemish Beauty, \$2, same; Fulton, \$2, Samuel Rolfe; Glout Morceau, \$2, George Jewett; Goodale, \$2, S. L. Goodale, Saco; Larwence, \$2, George Jewett; Louise Bonne de Jersey, \$2, E. N. Perry, Portland; Marie Louise, \$2, Alfred Smith; Seckel, \$2, Samuel Rolfe; Sheldon, \$2, S. L. Goodale; Vicar of Winkfield, \$2, Alfred Smith; seedling pears, \$3, Jefferson Stubbs, Hampden; Buffum, gratuity \$2, G. B. Sawyer.

SPECIAL PREMIUMS.

By G. B. SAWYER, Secretary of State Pomological Society.

For the best six varieties of pears for home use, in succession, five specimens of each to be exhibited, one copy "Thomas' American Fruit Culturist;" to Henry Ingalls, Wiscasset, (Clapp's Favorite, Bartlett, Belle Lucrative, Louise Bonne de Jersey, Seckel and Lawrence.)

Several exhibitors did not present enough of correctly named varieties to entitle them to the premium for which they entered them. Others lacked the required number of specimens, rendering it necessary to exclude them from competition. It only remains for your Committee to add, that the thanks of the Society are due to Messrs. E. C. Andrews, J. S. Bedlow, Dr. E. Clark, P. Duffee, Edward Gould, J. Maxwell, H. I. Robinson and G. W. Rich of Portland, A. M. Baker and S. P. Bachelder of Deering, Calvin Spaulding of Hallowell, Henry McLaughlin of Bangor, and J. M. Knight of Wiscasset, each of whom made a display of pears which contributed much to the interest and success of the exhibition.

J. C. WESTON, }
HENRY INGALLS, } *Committee.*
HENRY TABER, }

CLASS III—*Grapes.*

Best exhibition of foreign grapes, grown with fire heat, not awarded. Best exhibition of foreign grapes, grown in cold grapery, \$10, Dr. J. C. Weston, Bangor; second, \$8, Thomas Phillips, gardener to T. C. Hersey, Portland; third, \$5, Patrick Duffey, gardener to J. B. Brown, Portland.

Best cluster of Black Hamburg, \$2, Andrew S. Sawyer, Cape Elizabeth; Wilmot's Hamburg, \$2, H. P. Storer, Portland; Victoria Hamburg, \$2, same; White Frontignan, \$2, Dr. J. C. Weston; White Muscat, \$2, H. P. Storer; White Chasselas, \$2, Andrew S. Sawyer; Buckland Sweetwater, \$2, Henry Ingalls, Wiscasset; Trentham Black, \$2, same. Philip H. Brown, Portland, collection of foreign grapes, gratuity, \$3; L. J. Perkins, Deering, Black Hamburg grapes, gratuity, \$2; Geo. B. Sawyer, Wiscasset, native grapes grown under glass, gratuity, \$2; Geo. B. Sawyer, Red Chasselas, gratuity, \$2.

Premiums for grapes grown in open air were withdrawn by the Executive Committee on account of the limited competition.



THE CLARKE RASPBERRY.

SPECIAL PREMIUM.

By HENRY INGALLS, ESQ., Wiscasset.

For the best exhibition of six varieties of native grapes, best adapted for cultivation in this State, for table use, three bunches each, cash \$5; not awarded.

The Committee say,—“ Philip H. Brown, of Portland, exhibited some superior bunches of Black Prince, West’s St. Peters and other varieties of foreign grapes, grown in a cold grapery, but made no entry for any premium except that ‘for the best exhibition,’ to which, by reason of the limited number of varieties, the committee did not think him entitled. * * * *

Dr. E. Clark of Portland, exhibited Israellas more nearly ripe than any other grapes grown in the open air. The competition for many of the premiums was so very close that the committee had much difficulty in coming to conclusions. The exhibition of foreign grapes was one of great excellence. That of native grapes (grown in the open air) was limited, doubtless on account of the unfavorable season.*

[In the award of premiums Nos. 84 and 85 the chairman of the committee took no part.]”

Awarding Committee.—Henry Ingalls, Wiscasset; Dr. J. B. Bell, Augusta; Elijah Low, Bangor; G. W. Woodman, Portland; Alfred Smith, Monmouth; George Wilkins, North Vassalboro’.

CLASS IV—*Plums, Peaches, &c.*

Best general exhibition of plums, \$10, S. S. Low, Bangor; second, \$6, Calvin Spaulding, Hallowell; third, \$4, H. P. Storer, Portland.

Best dish of plums of a single variety, \$3, S. S. Low, Bangor; second, \$2, G. W. Woodman, Portland.

Best dish of Green Gage, \$1, S. S. Low; Prince’s Imperial Gage, \$1, Edward Gould, Portland; Coe’s Golden Drop, \$1, J. R. Thompson, Portland; Lombard, \$1, Dr. J. C. Weston, Bangor; Columbia, \$1, Calvin Spaulding, Hallowell; Magnum Bonum, \$1, Edward Gould; Washington, \$1, S. S. Low; Jefferson, \$1, same.

* A collection of open air grapes, which, considering “the unfavorable season,” was highly creditable, and some native varieties grown under glass, fully equal to those to which a gratuity was awarded, were shown by Mr. Ingalls. There was also a collection by Mr. J. Maxwell of Portland, and specimens by Mrs. A. E. Stratford of Monroe.

Awarding Committee.—T. C. Hersey, Portland; Calvin Spaulding, Hallowell; Albert Noyes, Bangor.

CLASS V—*Miscellaneous.*

Best ornamental dish of fruit, \$3, Miss M. L. Pope, Manchester; gratuity for same, \$1, Mrs. A. B. Strattard, Monroe.

Best exhibition of fruit jellies, not less than five varieties, gratuity \$1, Miss M. Colcord, Portland.

Best exhibition of wax flowers, \$2, Miss M. F. Bryant, Portland; second, \$1, same.

Best oil painting of fruits or flowers, 1st premium \$3, second \$2, H. McLaughlin for Miss A. E. Hardy, Bangor, (for paintings of the seedling pears Indian Queen and Eastern Belle.)

SPECIAL PREMIUM.

By ALBERT NOYES, Bangor. For the best general exhibition of fruit in the first four classes, a trio of thoroughbred Light Brahma fowls, to Henry Ingalls, Wiscasset.

Awarding Committee.—Same as for Class IV.

CLASS VI—*Flowers.*

Best display of cut flowers, filling not less than one hundred vials, \$10, Mrs. B. B. Farnsworth, Portland; second, \$8, P. Duffey, gardener to J. B. Brown, Portland; third, \$6, C. F. Bryant, Portland; fourth, \$4, J. A. Dirwanger, Portland; gratuity for same, \$3, Mrs. A. B. Strattard, Monroe. Best exhibition of Roses, not less than five varieties, \$3, C. F. Bryant; second, \$2, J. A. Dirwanger. Best exhibition of Dahlias, not less than ten varieties, \$3, Mrs. Charles Stanley, Winthrop; second, \$2, Patrick Duffey. Best exhibition of Pinks, \$2, C. F. Bryant. Best exhibition of Asters, not less than ten varieties, \$3, Mrs. A. B. Strattard. Best exhibition of Zinnias, \$2, Mrs. B. B. Farnsworth; second, \$1, Mrs. A. B. Strattard. Best exhibition of Phlox Drummondii, \$2, Mrs. Charles Stanley; second, \$1, Mrs. A. B. Strattard. Best exhibition of Stocks, \$2, Mrs. B. B. Farnsworth; second, \$1, Mrs. A. B. Strattard. Best exhibition of Petunias, \$2, Mrs. A. B. Strattard; second, \$1, Mrs. Charles Stanley. Best exhibition of Gladiolus, \$3, Albert Noyes, Bangor; second, \$2, C. F. Bryant. Best exhibition of Tuberose, \$2, C. F. Bryant. Best exhibition of Ferns, \$2, J. Vickery, Portland; second, \$1, Miss

Mattie Colcord, Portland. Best exhibition of Pansies, \$2, Mrs. A. S. Sawyer, Cape Elizabeth; second, \$1, Mrs. B. B. Farnsworth. Best pair of parlor bouquets, \$5, C. F. Bryant. Best wall bouquet, \$2, Mrs. Edwin Coburn, Portland. Best pair hand bouquets, \$3, J. A. Dirwanger; second, \$2, J. Vickery. Best single bouquet, \$2, same; second, \$1, Mrs. G. B. Sawyer, Wiscasset. Best bouquet of Asters, \$2, Mrs. Jennie Wilbur, Winthrop; second, \$1, Miss Hattie Stanley, Winthrop. Best bouquet of Dahlias, \$2, Mrs. Charles Stanley. Best floral design, \$8, same. Best floral wreath, \$2, Mrs. A. B. Strattard. Best basket of wild flowers, \$2, Miss Louise Andrews, Portland; second, \$1, Miss Mabel Elwell, Portland. Best collection of flower seeds, \$2, Mrs. A. B. Strattard. Best single pot plant, \$2, J. Vickery; second, \$1, J. A. Dirwanger. Best hanging basket, \$3, J. Vickery; second, \$2, same; third, \$1, J. A. Dirwanger. Best exhibition of shrubs, in pots, in flower, \$3, Miss C. C. Chase, Portland; second, \$2, T. C. Hersey, Portland. Best exhibition of dried grasses, \$2, Mrs. Charles Stanley; second, \$1, Miss Mattie Colcord. Best exhibition of everlasting flowers, \$2, Mrs. B. B. Farnsworth; second, \$1, Mrs. A. B. Strattard. Best Wardian case, \$2, Mrs. E. C. Andrews, Portland. Best exhibition of green-house plants, \$10, J. A. Dirwanger; second, \$8, J. Vickery; third, \$5, T. C. Hersey.

Gratuities—To Mrs. Thos. Shaw, Portland, for floral design, \$2; Patrick Duffey, for coxcombs, \$3; Reuben Ruby, for Mexican strawberry, &c., \$2; Mrs. B. B. Farnsworth, for Chinese pinks, \$2; Mrs. A. B. Strattard, for floral crosses, &c., \$1; Mrs. Charles Stanley, for floral monument, \$2.

SPECIAL PREMIUMS.

By S. L. BOARDMAN, Editor of Maine Farmer.

A silver vase of the value of ten dollars, to that woman who shall present to the Society the best original plan for a town or village flower garden, with a list of the plants to be grown in each bed, and accompanied by a description of its management and general culture; the plan to be presented and the prize awarded at the winter meeting in 1875. [See proceedings of winter meeting.]

By J. A. VARNEY & SON, Nurserymen and Florists, No. Vassalboro'.

For the best six seedling geraniums, originated and grown in this State, nursery stock to the value of \$2.00. [Not awarded.]

By the same—For the best exhibition of ornamental foliage plants, nursery stock to the value of \$2.00. [Not awarded.]

Awarding Committee.—Mrs. Daniel Fox, Portland ; Charles H. Green, Portland ; Mrs. Wm. P. Lennox, Wiscasset.

CLASS VII—*Vegetables.*

Best exhibition of vegetables, \$10, Thomas Phillips, gardener to T. C. Hersey, Portland ; second, \$6, Milton Dyer, Cape Elizabeth ; third, \$4, G. W. Allen, Cape Elizabeth. Best cabbages, 6 heads, \$2, Charles E. Gould, Deering ; table beets, 25 specimens, \$1, Andrew S. Sawyer, Cape Elizabeth ; carrots, 25 specimens, \$1, Patrick Duffey, gardener to J. B. Brown, Portland. Best egg plants, \$1, Philip H. Brown, Portland ; celery, 6 roots, \$1, J. Vickery, Portland ; peppers, \$1, Philip H. Brown ; peck of onions, \$1, G. W. Allen ; tomatoes, 25 specimens, \$1, Charles S. Pope, Manchester. Gratuities for turban squash, \$1, Andrew S. Sawyer ; for Marblehead squash, \$1, J. G. Warren, Deering. Best pumpkins, 3 specimens, \$1, G. W. Allen ; largest pumpkin, \$1, G. W. Woodman, Portland. Best sweet corn, 12 ears, \$2, Andrew S. Sawyer. Best collection of potatoes, not less than one peck of each variety, \$3, M. H. Hussey, No. Berwick.

Awarding Committee.—Joseph Bradford, Portland ; J. C. Mower, Greene ; Moses H. Hussey, No. Berwick.

PROCEEDINGS OF THE WINTER MEETING OF THE
SOCIETY, AND FRUIT GROWERS' CONVENTION.

HELD AT THE STATE HOUSE IN AUGUSTA, JAN. 20TH AND 21ST, 1875.

FIRST DAY.

The Society met at the time and place designated by the vote of adjournment at the annual meeting held in Portland, Sept. 24, 1874, and adjourned to meet at the Hall of the House of Representatives, at 2 o'clock, P. M.

On re-assembling, the meeting was called to order by the President, and the announcement was read by the Secretary, as follows :

"The second winter meeting of the Maine State Pomological Society, and Fruit Growers' Convention, will be held at the State House, in Augusta, on Wednesday and Thursday, January 20th and 21st, 1875.

PROGRAMME.

Wednesday, January 20.—At 12 o'clock M. Preliminary meeting at the Augusta House, (by adjournment from Annual Meeting at Portland, Sept. 24, 1874.)

Two o'clock P. M. Public meeting at the State House. Report of the Committee on Catalogue of Fruits for Maine. To be followed by discussion of varieties.

Seven o'clock P. M. Public meeting. First—Report of the Corresponding Secretary, Dr. J. C. Weston of Bangor, and discussion of subjects embraced in the same.

Second—Examination of Flower Garden Plans and report of Special Committee to award the Boardman prize for best original plan, with directions, (see schedule of premiums, September, 1874, page 13,) and paper on Floriculture and Ornamental Gardening, by Rev. J. A. Varney of North Vassalboro'.

Third—Discussion on Orchard Culture.

Thursday January 21.—At 8 o'clock A. M. Exhibition of Winter Fruits, for study and comparison, (to continue through the day.)

Nine o'clock A. M. Business meeting of the Society, for the presentation of the annual reports of the officers; transaction of business postponed from annual meeting in September, consider-

ation of order offered by Hon. W. Gilbert at last winter meeting (see proceedings, 1874, page 100); re-arrangement and assignment of duties of standing committees, etc., etc.

Two o'clock P. M. Public meeting for discussion of Pear culture, Grapes and Small Fruits.

The programme will be subject to such changes as circumstances may require, and other matters pertaining to the efficiency of the Society, and the promotion of Fruit culture, will be considered, as opportunity will allow."

The President, in a brief address, welcomed the members and visitors to the meeting, and presented the report of the Committee appointed at the last Winter Meeting to prepare a Catalogue of Fruits for Maine, accompanied by a list of varieties for the consideration of the convention, and as a basis for the catalogue to be adopted.

REPORT.

It has been the desire of all connected with the Society to make it—the Society—an authority on all matters pertaining to the culture of fruit in our State. In our transactions thus far, this end has never been lost sight of; and it is proposed to ever keep it in view in our future efforts. It may be that the aim is higher than we shall ever be able to reach, yet 'tis an object worthy of being striven for. The field on which we have entered is a broad one; and though we have entered upon it with earnestness, and are pursuing our labors with zeal, yet we realize that the results achieved are hardly perceptible. Indeed, we are aware that we can accomplish but little at a time, and we shall be fully satisfied if that little is accomplished. We do not expect to perform all there is to be done at once; hence every step should be carefully taken, that we may not want to retrace it as soon as gained.

There is need of a reliable authority in matters pertaining to fruit; and though we may not be able to settle beyond all further controversy all questions on which fruit growers are divided, yet we may be able, if our work be carefully and faithfully performed, to spot here and there a tree which may prove a guide for others to follow.

The enquiry is frequently heard from those who propose to plant trees and vines: "What varieties shall I plant?" The members of this Society, individually and collectively, have many times

had the enquiry made of them since our organization. To the uninitiated this seems a question easy to be answered, yet it is generally found that those who know the most about fruit are the most reluctant to answer it. In order to be able to convey this desirable information, the Society early had in view the preparation of a list of fruits for Maine. This took shape at our winter meeting, a year ago, in the appointment of a committee, consisting of Z. A. Gilbert, S. L. Goodale and S. F. Perley, to take the matter into consideration, and report at the present time. The failing health of Mr. Perley did not allow of his rendering any assistance in this direction, and his resignation was accepted, and Henry McLaughlin appointed to fill the vacancy. The committee thus constituted, realizing that all pomological knowledge was not by them possessed, issued the following circular to the fruit growers of the State:

*"Dear Sir:—*At a meeting of the Maine State Pomological Society, held at Augusta, January, 1874, the undersigned were chosen a Committee to prepare a Catalogue of Fruits for Maine, to be presented at the next Winter Meeting of the Society, to be held Jan. 20, 1875, and subsequently to be published in the Secretary's Second Annual Report. Our State embraces a wide range of latitude, and different varieties do not succeed equally well in all sections. The knowledge of the Committee is, in a measure, local. In order that the Catalogue may be made as reliable as possible, information should be drawn from all available sources in every section of the State. We therefore ask you to send to the Chairman of the Committee, Z. A. Gilbert, East Turner, a list of fruits grown in your section, with the leading characteristics of each variety stated as concisely as possible, in replies to the following questions—

1. Is it hardy? 2. Is it prolific? 3. Season? 4. Quality?
5. Valuable for market or home use?

Also, give any other information relating to a variety, which you may be able. All new varieties and kinds not well known should be described in full.

All replies should be forwarded on or before Jan. 1, 1875.

Z. A. GILBERT,
S. L. GOODALE,
H. McLAUGHLIN,

Committee on Catalogue of Fruits.

December 1, 1874."

This circular was published in the leading papers of the State, and it was forwarded to all the prominent fruit growers in every county. It brought forth a goodly number of replies, and for the interest thus manifested the thanks of the Committee are hereby tendered. In these replies, in addition to full lists of fruits grown in the localities from which the replies were received, there is communicated much valuable information, which, though it may not all be incorporated in this report, will be appropriated to our benefit and in due time will appear in the reports of our transactions. Accompanying these replies in several cases there were forwarded to the chairman of the committee specimens of the fruit described. In cases of varieties not well known, and as showing the variation occasioned by locality, these have proved an interesting and profitable study.

In making up the list of apples it has been decided to present a list of the principal standard varieties grown in the State—at least all those which have been disseminated to any considerable extent, and those standard varieties which have proved desirable in other States but have only recently been introduced here, and as yet only to a limited extent—and of these, to recommend only such as are deemed worthy. In this way we learn from the list what to reject and what to propagate. The idea of the arrangement of the list as here given was obtained from the list of the American Pomological Society published in their transactions.

Since the climate varies so greatly in extreme sections, different varieties are found from experience not adapted to the whole State. We find that some varieties may be highly recommended in the southern tier of counties, while they do not succeed at all in the northern section. Therefore, in order to make our list reliable over so wide a territory, it becomes necessary to divide the State into divisions, throughout each of which certain varieties may be recommended. Of course no lines can be drawn from which it will be unsafe to deviate in any degree, for we all know that if a variety of fruit is found to succeed in close proximity to an imaginary line upon one side, there is no climatic reason why it will not succeed equally well upon the other; yet this arrangement it is believed is sufficiently reliable for our purposes as furnishing a safe guide in pomological matters. We divide the State into three divisions, designated as the northern, central and southern divisions.

The northern division embraces northern Oxford, Franklin, Somerset, Piscataquis, Penobscot and Aroostook counties.

The central division embraces the remainder of Oxford, and Androscoggin, Kennebec, Waldo, Hancock, and Washington counties.

The southern division embraces Cumberland, Sagadahoc, Lincoln, Knox and York counties.

While this arrangement is not fully satisfactory, yet it is believed to be on the whole as well as we can do. Northern Aroostook, from its extreme high latitude, is an exceptional locality, and all the recommendations for the northern division will not apply to this section. In Washington county fruit is not extensively grown, yet it is believed the climate of that section will not present any serious difficulties to the growing of the varieties recommended for the central division. A few towns in the southern extreme of Oxford, of course are nearly the same in climate and in soil as are the most northerly towns of Cumberland, and the same fruits are adapted to either locality. All intelligent orchardists of course know this to be so. Deviations from county lines in the boundaries of the divisions, would therefore lead to confusion in the arrangement, more than they will mislead as here laid down.

It will be borne in mind that the Committee was instructed to report a list of fruits *to the Society*. It is understood by them, therefore, that the Society will modify, reject or accept the list here presented as they see fit. Not one variety which we recommend in the list should be allowed to stand unless it first receives the approval of the Society. Each variety named should be acted on separately by the Society before it is allowed to stand.

We recommend that the list be a *standing list*, to be published annually in our transactions; and that it be modified from year to year as further research and further experience may dictate. It would obviate mistakes if we make our list of recommended varieties quite small at first, and add to it from year to year as we may see fit.

We further recommend that the list here presented be followed by a descriptive list of at least those varieties which we recommend. This should include first a technical description of the fruit, followed by its habits of growth, soil to which it is adapted, and all other matters necessary to a full understanding of the variety under consideration. If this could be accompanied by an

outline of the fruit, it would give still greater value to the description. We want to make our reports hand-books of fruit culture, to which all who are interested in fruit may look for information.

The list as presented shows only the prominent characteristics of the several varieties—the leading, positive features. These, as is well known, vary in their distinctness according to the soil and locality in which they are grown. Hence the necessity of the further description which we recommend.

[The list of varieties accompanying the report of the Committee is omitted at this point, and will be found on subsequent pages, as modified by the action of the Society.]

The report was accepted, and it was *Voted* to proceed to the consideration of varieties of the apple, *seriatim*.

DISCUSSION ON APPLES.

[It will be observed that in the following abstract of the discussion which ensued, many of the varieties named in the report of the committee are omitted. In explanation of this it is proper to state that each variety so named was considered and acted upon separately, but in cases where no other remarks were made than those appended by the committee, and where the report was accepted, or mere changes made in the tabular columns by vote and without debate, no report of the formal proceedings is deemed necessary in this place. The Catalogue of Fruits hereafter presented embraces in a concise form the report of the committee as modified by the action of the Society.]

American Golden Russet. The President, Z. A. GILBERT of East Turner. A distinct apple from several varieties known in the State as Golden Russet. We have three or four, and perhaps half a dozen varieties, grown under the name of Golden Russet. A few of them are the genuine “American Golden Russet.” This is an early winter apple, of medium size, slightly elongated and tapering toward the calyx.

JOSEPH TAYLOR of Belgrade. I am glad to hear that explanation. I raise an apple which came to me as the Golden Russet; but it is very small, round, flatish, and does not yield very well.

Bell's Early. President GILBERT. In many of the fruit books this variety is not inserted. It may be the apple known as Sops of Wine, as it is of about the same quality. This is an apple extensively grown in this State, especially in the southern division, and portions of the central division, and known as Bell's Early. It is a very good apple, and has given good satisfaction where it is grown.

G. E. BRACKETT of Belfast. The apple called Bell's Early is very extensively grown in my section, and I find it is given in Thomas'

American Fruit Culturist as Sops of Wine. The description is almost identical, as near as I can tell; should judge it was the same variety.

Mr. GILBERT. A question arises here which has troubled the committee in making up the list of fruits. For instance: here is a variety known all over the State as Bell's Early; shall we put it in our list as Bell's Early, or Sops of Wine, providing the two are identical?

G. B. SAWYER of Wiscasset. I would recommend that we stick to the true nomenclature; or that at all events we preserve the true names, according to the highest authority.

Mr. TAYLOR. I raise a variety that came to me as Sops of Wine. I presume it is the same apple. It ripens about the time of Williams' Favorite, and it is a longish apple, growing somewhat striped instead of all red; intermixed with yellowish underground. But it is not a good apple with us, for the reason that it decays on the tree, and never gets mellow before it rots. It is nice flavored, but not profitable to raise. My father raised it before me, some fifty years ago. I think it came from the "Vaughan orchard," in Hallowell.

Mr. GILBERT. Rotting before it grows mellow, does not correspond to the fruit in the central part of the State. I have had an opportunity of seeing that fruit at several exhibitions in the State, and it uniformly appeared well.

Voted, To discard the name "Bell's Early" and adopt "Sops of Wine," retaining the former name only as a synonym.

Also, *Voted*, That in all cases where the local names of fruits differ from the known true names, such local names shall be inserted in the catalogue only as synonyms.*

Benoni. HENRY McLAUGHLIN of Bangor. A very fine eating apple. Personally, I should say one of the best. Season, early autumn. Follows the Bell's Early, with me. Valuable for market or table use. It is hardy and productive.

Black Oxford. HON. HANNIBAL BELCHER of Farmington. Grows very well in Franklin county, and is a tolerably good eating apple.

Blue Pearmain. Mr. GILBERT. Grown to some extent in Aroostook county, and by some individuals there, is recommended

* At the meeting of the Executive Committee, held in Portland, Sept. 22-26, 1874, it was *Voted*, To adopt the nomenclature of the American Pomological Society as the standard of this Society.

as a hardy apple. How is it in Penobscot, especially in northern Penobscot?

Mr. McLAUGHLIN. Very little grown now.

Mr. BELCHER. It is grown in Franklin county, but not to a very large extent.

Briggs' Auburn. Mr. GILBERT. A native of Androscoggin county. A valuable apple. Medium to large in size; recommended by all who grow it.

Danvers Winter Sweet. Mr. SAWYER. It is the best baking apple I know of.

Mr. McLAUGHLIN. A winter apple and keeps until March.

Mr. GILBERT. I am aware there are individuals who recommend it highly; but it was my impression, and here I speak as an individual only, that we could do better. Consequently it stands in the list of the committee not recommended in the central and southern divisions. In the northern division nothing is known of it.

Dean Apple. Mr. GILBERT. It is the Dean apple of Franklin county; most unexceptionable in quality. Where it has been introduced along the coast, it has proved very well indeed. But it has not been extensively tried yet in that locality. In Franklin county it is raised to a considerable extent, and is a very popular apple wherever it is known. It was originated by a Maine Quaker by the name of Cyrus Dean. I am fully satisfied that it did not originate in my neighborhood, as supposed by some persons.

Early Pennock. Mr. GILBERT. An apple not very generally grown throughout the State. I have grown it for quite a number of years and it is one of the best I ever grew. I can recommend it as highly as any apple I ever saw. The scions were sent to me and that is all I know about it, except what I learn from the books.

English Russet. Mr. GILBERT. The apple grown in this State quite extensively under the name of English Russet, is not the one found in the books under that name. Its season is late winter; size, medium to large; a very handsome, well grown apple. A vigorous grower, hardy and very prolific wherever it has been introduced in this State. But it is not the English Russet of the books.

Mr. TAYLOR. Give it an appropriate name if it is not the same apple.

Mr. GILBERT. It is a late winter apple, and will not keep through until the next summer.

[The subject of the English Russet was left in the hands of the committee for further consideration.]

Golden Ball. Mr. SAWYER. Grown in Wiscasset and vicinity by parties with whom I am acquainted, and they recommend it highly. I should venture to indorse it for that locality upon their recommendations.

Mr. GILBERT. It has been grown in Androscoggin county considerably, and not very highly recommended.

Granite Beauty. Mr. GILBERT. A market apple; introduced into the central and southern divisions but not extensively cultivated. It is grown in Lincoln county and comes highly recommended. It is a large apple, striped and splashed, but nearly red. A native of New Hampshire. Some one has raised the question whether it should not be credited to Maine?

Hurlburt. Mr. GILBERT. An apple not generally known and yet it comes with a very high recommendation. Many orchardists in Lincoln county say they should put a very large percentage of their trees into that variety. It is grown in York county, also, and is well recommended.

Mr. SAWYER. Mr. Farley of Newcastle does not speak as highly of it as he formerly did. I should not be willing to have it "highly recommended" from my knowledge of it, but "recommended."

High-Top Sweetings. Mr. GILBERT. As a family apple I think it indispensable.

Mr. TAYLOR. There is an old variety in our neighborhood called the High Top Sweeting, which has been there as far back as my memory extends. I think it is confounded with another apple originating in Sidney, named the King's Sweeting, by my father. The King's Sweeting, as I call it, is one of the best apples that grows in this part of the country. The tree bearing what we call the High Top Sweeting is large and uniform in its growth, a good bearer, and produces a flatish apple, very sweet and delicious. The High Top Sweeting as known in some parts of our county is what I call the King's Sweeting; or rather it is a longish apple, rather peaked and very excellent—superior to any other apple that I know of in its season.

Mr. GILBERT. The apple here meant is what is known as the Old Colony High Top Sweeting, and corresponds with the nomenclature. A tree of upright growth, fruit flatish, round and regular.

Mr. TAYLOR. That is it.

Kennebec Russet. Mr. GILBERT. An apple that originated in Kennebec county.

Mr. TAYLOR. I have raised an apple called by that name, but I should not recommend it.

King of Tompkins County. Mr. GILBERT. Put down as "best" for quality. Is that right?

CHARLES S. POPE of Manchester. Think that a little too high for quality.

Mr. McLAUGHLIN. "Very good," at the best.

Mr. TAYLOR. It is good with us where I live.

Mr. GILBERT. How does it compare with the Rhode Island Greening?

Mr. TAYLOR. It is as good as the Rhode Island Greening.

Mr. POPE. It is a question of *taste* altogether.

F. M. WOODWARD of Winthrop. I think it one of the best.

Mr. GILBERT. I think it is not giving satisfaction anywhere, though it is my impression that it would stand "best" in quality.

Mr. WOODWARD. I have had one tree for a number of years, and it has not borne very well until last year, when it bore as full as a tree could. It is a very handsome apple and I consider it one of the best. I should not recommend it for a market apple, however, until tried further.

Mother. Mr. SAWYER. Mr. Ingalls recommends it highly.

Mr. POPE. It is the best winter apple we have for dessert, but the tree, I think, is not very hardy—a great many poor ones. Cannot recommend it for general cultivation. But I recommend every one to have a few trees for his own use.

Moody. Mr. GILBERT. An apple that came from Newburyport, Mass., I think. A very good apple, about on a par with the Baldwin.

New Brunswicker. Mr. GILBERT. Grown in Aroostook extensively, and in New Brunswick; claimed to be a seedling of the Duchess of Oldenburg, and so near like it that I cannot tell the difference. The description given of the Duchess of Oldenburg will apply nearly as well to the New Brunswicker.

Naked-limbed Greening. Mr. GILBERT. Has received the very highest commendation in the county of Waldo, and sections where it has been introduced. Whether that is the true name of the fruit is not fully determined. It is the name by which it is known in

the localities where it is grown. 'I have a few specimens here, from Waldo county. It has been the opinion of some members of this Society, that it was an apple of some standard variety introduced into the State, the name of which has been lost, and that this name was substituted. I found the apple last fall on exhibition at Orono, grown by several individuals in that section, and every one gave it the very highest recommendation.

Orange Sweet. Mr. GILBERT. Introduced from New York, extensively, and is giving very general satisfaction. It succeeds well.

Poughkeepsie Russet. Mr. GILBERT. Grown in many sections under the name of Golden Russet. It will keep through until the next summer. English Russet is the genuine name.

Primate. Mr. TAYLOR. Its size is medium, and it is a most excellent apple. I don't know of a better one.

Pumpkin Sweet. Hon. RUFUS PRINCE of Turner. I don't know of a better sweet apple, in its season.

Mr. GILBERT. It is better than any other apple I ever saw for a baking apple.

Mr. PRINCE. I should recommend it above the Franklin Sweet.

Ribston Pippin. Mr. SAWYER. Growers are not recommending it in my neighborhood. They do not regard it as a good bearer, or a desirable fruit to grow.

Mr. McLAUGHLIN. It is a very fine apple, but it rots on the tree.

Mr. GILBERT. It seems to be somewhat freakish about that. In Androscoggin county it is giving very good satisfaction; not so full a bearer as the Baldwin, but a hardier tree.

Mr. PRINCE. With me it is one of the most profitable apples I raise, but still, it is generally a shy bearer.

Mr. McLAUGHLIN. Does'nt it rot on the tree—a sort of dry-rot?

Mr. PRINCE. No, sir; it is very uniform. My impression is, that as a rule it is a shy bearer, and not to be recommended, although with me it is a good bearer.

ALFRED SMITH of Monmouth. I have known the tree for fifty years, and have found it hardy. It needs a high state of cultivation, higher than the Baldwin, a different soil, or different quality of dressing. I think it is as good an apple as there is in the country.

Mr. PRINCE. Think apple growers in our county would recommend it.

Mr. POPE. We have one tree of this variety cultivated as highly as the Northern Spy, or the Dean Apple, or Franklin Sweet, and we don't get a peck of fruit from it a year, though it is large enough to bear two barrels.

Mr. TAYLOR. I have raised the apple for fifty years, and I have never considered it a profitable variety to raise. The tree grows pretty well, but the leaves almost invariably look as though they were just going to die; small, curled and shrivelled. And the fruit on the tree is very scattering. I have not recommended it for general cultivation, although, in my opinion no better eating apple can be produced.

Mr. PRINCE. The shrivelling up of the leaves is one of the peculiarities of the tree.

Roxbury Russet. Mr. WOODWARD of Winthrop. Don't think it is worth cultivating. And yet, three miles from my place there are those who think it the best apple to raise there is.

Mr. GILBERT. It is so all over the State.

Mr. SMITH. I have made more money raising the Roxbury Russet than I ever did by raising the Baldwin.

Mr. GILBERT. I believe the Poughkeepsie Russet can be made to take the place of the Roxbury Russet, where the latter cannot be grown. In soils adapted to the Roxbury Russet it is a profitable apple.

Mr. PRINCE. It is my opinion that in a deep, moist soil, it is a profitable apple.

Somerset. Mr. GILBERT. Nothing before it in its season, taking its appearance and quality into consideration.

Mr. WOODWARD. I should not recommend it for a market apple, but for family use I think very highly of it. It ripens gradually.

Mr. McLAUGHLIN. A man don't want more than one or two trees of it.

Mr. WOODWARD. No. They keep dropping off, and at last you don't have any. My tree has borne every year. Don't think it bears so well as the Baldwin.

Mr. McLAUGHLIN. From what I know of it, I think it a regular bearer, and a good family apple; but you cannot pick a great quantity of them at any one time.

Sidney Sweeting. Mr. GILBERT. A native of the town of Sidney.

Mr. TAYLOR. My father took the first scion from that tree 65 years ago, and it was called the King of Sweetings. It is quite a large apple, slightly oblong, yellow, and very nice indeed. It is

a very good bearer. Ichabod Thomas was the originator of it. My father took an apple from the original tree in the fall, and in the next spring he cut the first scion from the tree that was ever taken from it, and grafted it; and we have raised it ever since, and it has been widely disseminated through Sidney, Belgrade, and all that portion of Kennebec county.

Voted, To adopt the name of *King Sweeting* for the last named variety.

Adjourned to 7 o'clock, P. M.

Among the answers received by the committee to their circular, were many containing valuable suggestions in addition to the specific subject of enquiry. From these we select the following letter, as presenting in connection with the consideration of varieties of apples, the important subject of their "season" as affected by locality:

LETTER FROM MR. CALVIN CHAMBERLAIN.

Z. A. GILBERT, ESQ., *Chairman of Fruit Committee, etc.*

MY DEAR SIR:—Herewith I send you a list of some of the fruits found on my own grounds and in the immediate neighborhood. A few sheets might be filled with comments on many of the varieties, their success in the locality, &c., but all that sort of work can better be done in committee of the whole, with samples, and the paper and your time be saved.

There is one matter that should have a prominent place in the transactions of our next meeting, which may very properly be presented by some one representing the Northern section of the State. I refer to the fact that the *season* of our leading fruits is fixed by the locality—being retarded by each mile of advance northward, and by each foot of elevation. This is more observable from the coast line of the State to the interior, than along the coast from the southward; for in addition to the latitude is the constant increase of altitude. This change in the time of ripening may best be seen by taking note of a few varieties.

The Summer Sweet Paradise of the Middle States, is a late Fall apple here. The Kilham Hill, an early Fall apple in Essex county, Mass., where it originated, is a Winter apple here. Hubbardston Nonsuch can hardly be kept in Connecticut beyond November, while here in Piscataquis county we often have it sound and in perfection to April or May. Jewett's Fine Red (Nodhead) in Cumberland county, hardly holds beyond New Years; and even in Kennebec is called a Fall apple; while here we are not anxious about its market till February or March. I once surprised some Winthrop gentlemen by showing them the Winthrop Greening in perfection in February. They could hardly believe that their Fall favorite could be converted into a first-class Winter apple, by simply growing it seventy miles farther north. At the present writing (Dec. 19th), the four last named, in my cellar, show very slight change since harvest, and promise to serve us to April. The Porter, by careful handling, can often be kept to December. I have some that promise to be in condition about the time of our Winter

meeting. The Seekonk, a favorite in Massachusetts in September, is ripe here in October, and some holding to December. The fact thus shown serves us in a greatly extended list of Winter apples; and at the same time we are not aware that the long keepers fail to ripen so as to detract aught from their market qualities, with perhaps the single exception of the Baldwin.

The list embraces a few that have been introduced in the last few years, by means of trees grown in other States, that are now beginning to fruit, and which promise well.

To my taste, the apple I give as "Pound Sour," is one of the best. Some years ago, in making an autumn visit in Oneida county, N. Y., I found this apple extensively grown, and then showing a fair crop of fruit, although at the time very few apples were seen from Maine to Ohio. The peculiar success attending this noble looking variety, led me to make inquiry as to its origin; and I was referred to a clerical gentleman, as the best local authority in such matters. I succeeded in getting an opinion that the apple had only a narrow, local history.—Tree large and strong; head broad or round, and rather open; horizontal branches, well set and stout; bark smooth and light colored. Fruit green, and changing to yellow; round and smooth, to irregular ribbed; very large,—average weight one pound—150 fill the barrel. Single trees in Oneida county often produce a crop of 40 to 50 bushels. Hardy here.

Beside the apple, the story of Piscataquis fruits may be told in short. A few pear trees are being set, rather as an experiment, as the older planted have nearly passed away. Of the older trees, the Flemish Beauty endures the best. The Seckel and the Goodale prove hardy and productive. Plums and Cherries are nearly extinct. Some trees are being planted, under the promise of the vender that the variety shall be exempt from "black knot." The planting of Grape-vines is still in fashion. Among my late additions, I particularly enjoy the eating of Salem, Massasoit, Croton and Adirondack.

Hoping to meet with you with samples,

I remain, very truly yours,

CALVIN CHAMBERLAIN.

FOXCROFT, Dec. 19, 1874.

EVENING SESSION.

The exercises of the evening were opened by the reading of the report of the Corresponding Secretary, Dr. J. C. Weston of Bangor.

It was *Voted*, That the report be accepted, and the thanks of the Society tendered for the same, and that it be published in full with the Society's transactions.

DISCUSSION ON ORCHARD CULTURE.

The PRESIDENT. We have a few moments to spare at the present time, and it strikes me that it may be well to devote them to the consideration of some of the points brought out in the report we have just heard. I notice present Judge Gilbert of Bath, and I would call upon him for a few remarks. The portion of the report referring to the culture of the apple, in which Pell's system is described, is a suggestive point, and one to which some little time may be well devoted.

HON. WASHINGTON GILBERT of Bath. The report of the Corresponding Secretary is of so general a character that I imagine any one called upon as I am, must feel some misgiving as to what he ought to say. It is said, however, by the Chair, that some discussion in reference to the system of Mr. Pell may be profitable. And I think so myself.

This orchard has long been celebrated in the country, and it is a matter, perhaps not so much of wonder as of regret, that the example is not imitated in our own State. I am well persuaded that for some varieties of long-keeping apples for shipment, the State of Maine has advantages equal to any of the other States. I suppose that by those who assume that Maine is the greatest State for apple culture, as well as for almost anything else, I may be considered hypochondriacal in holding that there are other States that have greater general advantages than the State of Maine. But I don't think that we gain anything by shutting our eyes to the facts in that respect. And while I am willing to concede, and do maintain, that there is a greater variety of excellent apples produced in some of the other States, I still contend that Maine has ample scope and variety enough; that we have large and numerous tracts of land that are best adapted to the culture of apples, and that by skill, and energy, and perseverance, the best varieties that best thrive in these best orchard lands, and will yield the most profit, can be ascertained. And while we see such vast amounts of capital invested in various other enterprises, many of which have been made successful only by reason of the greatest energy and effort, by the intensity of application in the pursuits of the several branches of business, which have thus been forced into success,—an application as great as it is possible, in many instances, for the human mind and the human frame to endure—it is, as I said, perhaps not so much a matter of wonder as of regret that this field of enterprise is not more cultivated. We content ourselves with a fruit garden, or an orchard of an acre in extent, or a very few acres, at most. The examples of orchards reaching to the extent of ten acres, are very rare. And we know how very many farms and homesteads there are throughout the State where there is not a single tree; how many more there are where there have been a few trees planted and neglected, until there is not a single tree there, while thousands of hungry children are constantly uttering devout but mute prayers for the gratification

which the eating of fruit affords, and the health of the people is suffering in consequence.

Now it seems to me that this Society has some things to do, and that the matter of promoting extensive cultivation of the apple as a business, as a distinct and specific business, and a separate branch of farming, is one of the things which we have to do. I am aware when we talk of that as a separate branch, that a difficulty arises as to the fertilizers to be used. And I will say in regard to that matter—for I am not trying to deliver an essay upon that subject,—I want to renew a remark which I made last year, namely: that my experience (which has been continued through the past season), with the Cumberland Superphosphate of lime, has afforded me a great deal of satisfaction, and I believe that that may be made one of the profitable means by which agriculture can be carried on to a very large extent, and with success.

A difficulty which meets us when we talk of such an orchard as that of Pell's, or the orchard of the gentleman at Franklin, in Illinois, where he has 18,000 trees, and I was told by one of the officers of the Pomological Society of Illinois, that he made his orchard produce, in fruit and cider and vinegar, more than \$50,000 a year,—when we talk of orchards of that extent, the difficulty of the want of sufficient dressing meets us. I have tried this Cumberland Superphosphate of lime for those uses, though not on a large scale, because my operations are small. I don't wish to be understood as advocating that particular kind any further than that experience with that kind has demonstrated its utility. There may be others as good.

Now I want to refer again, as I did last year, to the practice of feeding sheep and swine in the orchard. In the essay which I had the honor to submit last year, I think the facts demonstrated that after making liberal allowance, an orchard will yield \$100.00 per acre, annually. I believe it is very profitable to feed corn or small grains to sheep and swine in the orchard, and if I could carry out the experiment, I would select a tract of land of fifty or one hundred acres, more or less, where I could so arrange matters as to have a stream of running water, and proper slopes, and a soil sufficiently underdrained by nature and of a proper texture, where the plough could run deep; and the plough having run deep, I would plant the apple trees, selecting, according to the best knowledge we now have of that matter, the long-keeping varieties adapted for shipment; and one of the means for manuring which

I should employ would be the extensive feeding of corn, or any other grain that might be more economical, to sheep and swine, in separate inclosures upon those lands, where I could regulate the feeding and the grazing at will, for the purpose of keeping up the fertility. From the best information that I have in regard to the matter, I believe that the market product of the animals would pay all expenses, and that the results of the fertilization thus derived would be all profit, and that there would be more profit than that even, on that branch of the matter; and thus the culture of the apple may be carried on to a very great profit, and on a very large scale. If I could so manage my farm operations that I could produce my own corn and small grains for that purpose, I would; and if I could not do that, I would go where I could obtain it to the best advantage, whether it were in the State, or in Illinois, or elsewhere.

That is my view in regard to the matter. It is, I know, to a certain extent, theoretical; but it is a theory which has been demonstrated in repeated instances by practice, on a small scale. I can remember well the period of my boyhood, when I have seen apples more than doubled in their size in a single year by the pasturing of swine upon the ground where the trees were grown, and where they had stood until they had extracted from the soil almost all the fertilizing matter,—the food which sustains the tree and causes it to produce fruit. The result was attained simply by the pasturing of swine, and the working into the soil of the manure which they made.

THE PRESIDENT. If there are gentlemen present who are interested in orchard culture, and who desire to have any question answered by gentlemen of experience, such questions as they may see fit to ask will be entertained.

MR. GILE of Alfred. I would ask if a piece of land that is infested with witch grass is decidedly unfit for orcharding?

MR. PRINCE of Turner. I would like to hear from Dr. Harris of Auburn, who is much interested in the subject of orcharding, and who has a fine orchard under way.

DR. HARRIS of Auburn. I am surprised that the gentleman from Turner (Mr. Prince) should have called upon me. I am a new member of your society, and am a mere novice in orcharding. I came here to gain information; I am too young in the business to undertake to impart any. I should prefer to be excused, and to hear from those who have had more experience than I have.

Mr. CORTHELL of Calais. I would like to inquire how far apart fruit trees should be set, upon land that is to be devoted entirely to orcharding?

JUDGE GILBERT. As the question first propounded seems to have the precedence, in answer I beg leave to ask my friend Smith, who sits near me, to give his views in regard to witch-grass again, for I believe that is one of the most important questions there is. I think there are means by which witch-grass can be extirpated. And although I do not think it does much harm in an orchard, except to impede cultivation, I would like to know if Mr. Smith can tell us something about the best methods of extirpating it, and whether he thinks it ought to be extirpated or not?

ALFRED SMITH of Monmouth. I have had some experience as to the question proposed by the gentleman in relation to witch-grass. While I lived in Winthrop I had some seven acres of orchard, and the land was full of witch-grass; but the swine and sheep that I pastured there, entirely destroyed it. Sheep will eat it down very close. I think there is no difficulty whatever, in cultivating an orchard where there is witch-grass, if you pasture it with sheep. I think a great deal of mulching. For the past twelve years I have used some twenty tons in an orchard of about an acre. I keep the grass down well enough in that way. I find that trees suffer more for the want of suitable dressing than anything else.

JUDGE GILBERT. What is your opinion as to the effect of witch-grass upon the thrift of trees, if it is allowed to grow in an orchard?

Mr. SMITH. I don't know why there should be any more difficulty with that grass than with any other grass. I have never seen any in my orchard.

I think there are a great many trees that have good trunks and bodies, that might by proper management and the expense of a dollar, be made to pay five hundred per cent. on that expenditure. Twelve years ago my orchard at Monmouth was as poor as anything I ever saw. The ground was so poor that it wouldn't bear a quarter of a ton of hay. The leaves upon the trees were small. The orchard was grafted, and had been neglected, and there were many dead limbs. I trimmed out the dead limbs, plowed, mulched and dressed with the manure that had been made on my place for two years. I raised crops in the orchard, and found the fruit to be very valuable. The trees threw off their old coats, and they now seem to be in their original vigor. I am now raising from

those trees as good fruit, I think, as I used to raise in Winthrop. In Winthrop I raised one year 300 bushels of Russets. When I went to Monmouth, that variety of fruit there was so small that I was ashamed of it. I sent them to Boston, and they passed as No. 2 in that market. Since then those very trees, by my cultivation, have borne as handsome russets as I ever saw. I have shown them to people that were well acquainted with the apple, and they thought it was a new kind, so fair and smooth did they look. And it was cultivation that did it. My location now is not such soil as I had in Winthrop. It is more of a granite soil, and rather a clayey loam. It is my experience, that in any high lands where an apple tree will grow, good culture with proper and judicious pruning will produce good fruit. Many kill their orchards by pruning.

Mr. GILE. Do borers infest your trees?

Mr. SMITH. They do not in Monmouth. In that soil I have never seen one, while in Winthrop where I was formerly, they are very troublesome.

Mr. GILE. Does the pasturing of sheep in orchard land tend to the destruction of borers?

Mr. SMITH. I should think it probable that it might in some measure, because the borers are inclined to get where there is grass. If the sheep feed it down, it would not give the borer so good a chance. I think they are not so likely to trouble a tree in cultivated land as where the ground is laid down to grass. But the soil, I think, has much to do with the borer. Some soils they can winter in well, others they cannot. I have never had any trouble from them in Monmouth. While in Winthrop they were very troublesome. The reason for it I don't know.

Mr. PRINCE. The question propounded by the gentleman from Calais (Mr. Corthell), is a matter that I have thought more in regard to, within a few years, than any other question relating to orcharding; and the more I think of it the more doubts I have. I have always set my trees from twenty-five feet to two rods apart. But upon reflection, and upon looking over the country, I have thought I had made a mistake. I have very seriously questioned whether it is not better to set them nearer together. I think that any one in looking at our old orchards, will find the most thrifty of them are where the trees are set near together. The question arises, whether trees near together do not protect each other and become hardier? In a conversation which I had with one of the

leading fruit growers in the western part of the State, (the Hon. Samuel F. Perley), he said it was a point he never thought of before; but upon reflection, and looking back upon our old orchards, he thought that might be the case. It is a question that I am not satisfied about, but the more I think of it the nearer I come to being convinced that we should set our trees nearer together.

JUDGE GILBERT. I would like to say a word in regard to the destruction of insects by swine. Gentlemen well understand that the swine is a carnivorous animal, and he will search most industriously for insects, destroying the larvæ and the insects in a higher state of development when he finds them. And there is no doubt in my mind that the pasturing of swine is the most effective method of keeping orchards free from insects.

THE PRESIDENT. While this subject is inexhaustible, yet our engagements will not allow of its further consideration at this time. It will be proper, therefore, to lay it aside and give our attention to the concluding subject in this evening's programme, which is an essay

ON FLORICULTURE AND ORNAMENTAL GARDENING,

BY REV. J. A. VARNEY, OF NORTH VASSALBORO'.

[Embracing the report of the special committee to award the prize offered by Mr. S. L. Boardman, Editor of the *Maine Farmer*, of "a silver vase to that woman who shall present to the Society the best original plan for a town or village flower garden, with a list of the plants to be grown in each bed, and accompanied by a description of its management and general culture."]

How the very spirit of a person of fine feeling and susceptibilities loves the beautiful in nature. To him, the murmur of the running brook, as it rolls through some lovely vale, is like whispers from the spirit land, where the dear departed breathe a life of eternal youth. Standing beneath the shade of some forest grove—the long pendant branches form a bright green canopy above him. The gentle breeze comes and touches them—they murmur—and all is still again. There was something in that sound which calmed, and yet amazed him. This is but another of the voices with which nature speaks to the soul. Not as the thunderbolt hurled from the clouds, or the roaring cannon and clash of arms in battle's strife, but so low, and yet so distinct, so sad, and yet so soothing. To the gross and sensual mind it is meaningless, but to him it breathes the very soul of memory, tenderness and love.

Thus it is with the flowers that are strewn so plentifully along our pathway. Some cast them aside as things of little worth, or tread heedlessly upon them, crushing out their sweet life, without one thought of what they are or what they mean. To them, they have no beauty, and the fragrance they send up as a welcome to man passes by them and mingles with the upper air.

Not so with the man of feeling, for he accepts them as smiles sent forth from the Great Unknown, as mementoes of His undying love. To him, they are valuable and lovely, for he remembers the saying of the Great Master, whose words were *never* meaningless or superfluous, "that even Solomon in all his glory was not arrayed like one of these." And so his heart is pained at beholding the insensibility of his fellows. They tread unrelentingly upon the flowers he loves. Coming often, he gathers them with greatest care, for they bring down through the ages the remembrances of the first Eden. They recall the image of many a flower of beauty and loveliness, crushed in its clinging, confiding tenderness and love, by some ruthless hand. To him every bud and blossom on the wide earth, speaks of some corresponding human feeling or passion.

Their offices, too, are as numberless as the offices of thought. They tell us of hope, joy, peace, meekness, confidence and love, and they speak of sorrow, weeping and bitterness as well. They bloom for the early dead, and, catching the falling tear upon their shining petals, they lighten up the churchyard, and trustingly, confidingly point the mourner to the Eden of flowers above. They deck the conqueror's brow, they adorn the festive hall, they encircle the brow of beauty. Infinite in variety and form and endless in colors and symmetry, they clothe with abundant profusion—alike the mountain and valley, the cottage and court, the prison and palace.

Now as a person of fine feelings and susceptibilities loves the beautiful *in nature*, so will he love the beautiful wherever he finds it. There is a life-like power in language, which when it clothes those tender thoughts awakened by nature's scenery, often lends vigor and light to the original picture and breathes over the whole immortality of feeling.

As I looked out through the frozen glass of the green-house, while penning these lines, it seemed, indeed, an unpropitious day to write an essay upon the subject of floriculture. The thermometer down below zero, the fierce wintry blasts without and

the driving snow beating upon the windows. The spring time passed, the summer and autumn ended, and a cold northern winter upon us. The mountains have put off their beautiful garments of verdure, and valleys and plains are no longer clothed in luxurious green; the trees and shrubbery without have lost their foliage, and their branches bend naked and forsaken over the ice-bound streamlet, from the bosom of which no waters send up their liquid music. The flowers, too, are faded, and nestling upon the bosom of earth beneath her snowy mantle. There is something in this wide-spread desolation of winter that impressed us with sad thoughts, for all these remind us of the sere and falling leaf of age, telling us that the winter of life will soon be upon us and that we too must lie down in the rest of the grave.

I have said that the flowers sleep beneath the snow through these wintry hours, but soon they shall break forth into glory. So, too, I trust, we are all comforted with the bright hope that we shall be permitted to enter that land where the winter comes not and where "fragrant flowers immortal bloom."

Spring with all its budding beauty will soon return to us again, and with it the call for renewed energy and preparation for its work. For the present the fortunate possessors of house plants will find a mine of pleasure in caring for and watching the early developments of the conservatory and window garden. These now should be coming to maturity, and in a few weeks should amply repay all the care and labor bestowed. It is now too late to offer suggestions for their general management and culture for this season's bloom. Let all plants be kept free from dust and vermin, and let the temperature be as even as possible, to insure success.

In window gardening the three great obstacles in the way are these: green fly, red spider and uneven temperature. The first should never be seen, but if you chance to be annoyed with them—and the room in which they are will admit of it—take an iron or earthen vessel, place in it a few burning coals and on this place a handful of tobacco stems, well moistened; close the room and leave it for the night. This repeated occasionally is the end of green fly or green lice, as they are sometimes called. If you cannot treat them in this manner, take out the plants, cover them with paper or spread over a sheet and smoke them lightly until every fly falls to the floor, then with a soft brush go over the plants and return them to their place. Not long since, I saw in one of our local papers, "syringing with water" recommended

as sure death for the green fly. They will only look up and laugh at you in return for such treatment.

Are you troubled with the red spider? This only tells you that you have too much heat and too little moisture. Water is now the sure remedy. Take the plant to the sink—if you cannot do it where it grows—lay it upon one side, hold the syringe over the pot and with cool water thoroughly syringe the underside of the leaves, turning the plant over in the meantime that no leaf may escape, and the work is done. In the moist atmosphere of the green-house the insects are seldom seen, while the ravages of green fly are ruinous without frequent fumigation with tobacco.

For a general collection of house plants, let the thermometer range from 45° to 65°; 40° by night and 50° by day would be even better. If by any mishap your plants should all get frozen, do not throw them away as lost, but take a whole day to bring the room back again to the accustomed temperature, for if this is done in a few minutes, or even in two or three hours, the chances are that your plants are nearly ruined, if not killed outright. It is not fire heat or sunlight that you now need, but shade, and cool water at once from the well. Put some thick paper over the top of the pots, to prevent the earth from becoming too much saturated with water about the roots, and then with sprinkler apply the water so long as any ice can be seen about the plant. With this treatment, in the absence of fire heat and sun, your plants, and blossoms, too, are nearly or quite all safe.

During the past month, the plants in both of our green-houses were nearly all frozen. The day and evening previous were mild and warm, and little or no fire heat was used; but during the night there came a sudden change, which gave the writer plenty of business for the next day. The cactuses and geraniums all coated with ice, as I applied the water from the force-pump. A hundred or more callas, with their beautiful foliage lying like hounds' ears over the sides of the pots, (one of which has to-day a bud not yet fully developed standing upwards of four feet above the top of the pot), came out unharmed. Indeed, I am half inclined to think that the cold bath it received only served to urge it onward and upward.

Let your plants show that they are thirsty before you give water, and then water till the drainage shows that they are thoroughly wet. This is better than frequent and slight applications. We give hot water daily to calla lilies coming into blossom, and always

plant them in water-tight pots or tubs, that roots and soil may all be constantly under water. By the first of June the pots should be turned on the side, on the shaded side of a fence, hedge, or building, there to remain till the first of September, uncared for, except to roll them over occasionally, that the few leaves remaining on them may not grow all upon one side. Then soak the dry plant and earth in water, remove unnecessary side-shoots or bulbs, and re-pot in one part each of sand and muck and two parts old well-rotted cow manure.

For soil for general use, we find nothing better than well rotted turf from the road side or pasture; old, well pulverized horse or cow manure, (the former is preferable), and common sand, in equal parts; and if mixed a year or two previous to use the better. In the absence of rotted turf, old and finely pulverized muck, or leaf mould from the woods, will answer well, indeed, would be preferred by some.

In re-potting, and when a change of the soil is necessary, you should never break or shake the soil from the roots, as some tell us to do, but place the ball of earth in a tub of water, and with the hand gently stir until the earth is all free, then, if necessary, trim with a sharp knife or scissors. This operation is about the surest remedy for a stand-still, sickly plant of any variety, and if this fails it may as well be laid aside to make room for another of more promise. This nursing and petting a fancy-leaved geranium, cissus, or what-not, for a series of months, even years, is hardly worth the pains bestowed, while there are so many varieties of desirable plants at hand.

Should your pot plants need enriching, a small spoonful of liquid ammonia from your druggist, added to a pail of water, or what is equally as good, if at hand, a pail, tub or barrel, located in some out of the way place, filled one-eighth full with hen manure, and the balance with water, after being well stirred and settled may be used twice or thrice in each month.

Now we will turn our attention to the coming work of spring. There is no witchcraft in growing flowers—those most desirable for the masses—only a little perseverance mingled with common sense, will insure success.

The plans submitted for Mr. Boardman's premium are all executed by the more ardent lovers of flowers, the ladies, and all reflect much credit on the skill and good taste of those who designed them.

Here I shall be pardoned for referring to a communication from one of the Committee, in which he says: "Try to convince the wife and daughter of your industrious mechanic that the sowing of a few seeds in a box over the kitchen stove, and setting out the plants in spring, though it is always a little thing, yet it is one that shall in future give her joy. * * * The farmer's wife is rising in the scale of being, by just such little bits of culture. * * * Let them aim at little things, and do not discourage them by using terms that they cannot understand."

In procuring your stock of seeds or plants, touch lightly upon the high priced named varieties, to which the florist has given high sounding names, that are perfectly bewildering to the amateur and unenlightened. Leave these to be tested by those who have the time to devote to it, and the purse to sustain it. Florists have a method of bringing out new varieties by hybridizing, to which, for obvious reasons, names as well as high prices are given. First, try the old varieties, well tried and mixed, without names if you please, at moderate prices, for these generally give the best satisfaction.

Seeds may now be procured, and some of those that need to be started early may be planted in shallow boxes, two or two and a half inches in depth, in soil as above directed, and placed upon the mantle, or on the sunny window-sill, toward the close of the month of March. The smaller seeds may be spread evenly on the surface, and covered with a thick, wet woollen cloth till they sprout, or gently pressed into the surface soil and covered tightly with a pane of glass.

The interchange of plants and seeds in a neighborhood, should be as much a matter of course as any other neighborly courtesy. Do not hesitate to ask for them, and in return be as ready to give as you are to receive.

In closing I quote again from my correspondent: "There is beauty in every flower. There is wonder, a miracle even, in every petal. Who made them? Are they a bond of union between us, with our poor little aspirations, and the Great Unknown? If so, what a pleasure to contemplate them! What a transport to evolve it from the little seed! You must encourage every woman to try, then she will begin to be elevated; after this, then, she will have her influence upon stolid, selfish man."

REPORT OF THE COMMITTEE.

The committee have received five plans and specifications as follows: No. 1, by Mrs. J. J. Steward of Skowhegan; No. 2, by Mrs. A. B. Strattard of Monroe; No. 3, by Mrs. Lucy S. Sayward of Alfred; No. 4, by Mrs. A. A. Sawyer of Wiscasset; No. 5, by Miss L. Marie Pope, Manchester. All of these plans are decidedly worthy of much credit, and present outlines, suggestions and information, well adapted to the purpose for which they were designed.

The committee have had no opportunity to consult with each other, except by letter, and the decisions have been made by each member, without any knowledge of the opinions and decisions of the others. The chairman forwarded the plans to Gen. Tilton, and he in like manner forwarded them to his wife, then in Boston, each returning their decisions by mail, and all were found to agree in awarding the premium to Plan No. 4, executed by Mrs. A. A. Sawyer of Wiscasset, and which is herewith presented.

All of which is respectfully submitted.

JAMES A. VARNEY AND WIFE, } *Committee.*
W. S. TILTON AND WIFE, }

Which report was accepted, and it was

Voted, That the thanks of the Society be tendered to Mr. Varney for his valuable essay, and that it, together with the report of the committee, and such of the plans and specifications as they should direct, be published in the Transactions.

After the passage of the above vote, remarks were made by the President of the Society, and by Mr. S. L. Boardman, after which the presentation of the vase took place and the meeting adjourned.

The following are the papers and extracts selected for publication from the manuscripts submitted to the committee:

PLAN NO. 4, BY MRS. A. A. SAWYER OF WISCASSET.

In this design the garden is supposed to be located on the south-erly side of the house, and extending forward towards the street, which runs north and south in front (west) of both; but the plan may be reversed or modified to adapt it to any given locality. Somewhere on every town or village house lot there should be land enough for such a garden as is here represented. Between the

house and garden there should be a narrow plat of grass, and a more extensive lawn in front of the house, in which circular or fancy shaped beds may be cut for small shrubs of select varieties. Stumps of trees can be covered with running vines. Rustic boxes and seats, if they are artistically made, and vases also, add much to the beauty of a lawn or garden. The surface should be level, and terraces ascending or descending may be introduced on either side to make it so.

In beds No. 1 and No. 4, the centres of which are raised about one foot above the surrounding surface, plant hyacinths and tulips, for spring blooming; a circle of hyacinths at the centre, with tulips filling the other spaces. They need a rich soil, and are perfectly hardy; set bulbs in the fall, three or four inches deep, and cover well with boughs to protect them through the winter. Fill the beds with verbenas of all the leading colors, (without removing the bulbs); set about one foot apart, and peg down as soon as set out, if the plants are large enough. I would recommend buying the plants of florists instead of raising them from seed. If one chooses, young roots may be potted in September and kept in a cool room during winter, and cuttings may be made in February for bedding out in June.

BED No. 2 and 3—Geraniums. Scarlet, white, pink, salmon and carmine—set in ribbon style. I recommend keeping them in pots plunged about two inches below the surface, and a flat stone should be put at the bottom of each pot to prevent the roots from going through the outlet; they should be plunged one foot apart, and should be watered every day if there has not been rain, but on no account apply water to the leaves, blossoms or buds. The advantages of treating geraniums in this way are, they can be put out in beds earlier, will blossom more freely, and if frosts are expected early (as we sometimes have them), the pots can be lifted and sheltered, and put back again in the morning, and have your beds look pretty all through the autumn. Keep in pots during winter, or take them from the pots and pack in boxes of sand; and in either case keep in a cool, dry place, and water once a week. Or they can be hung in the cellar, shaking the earth lightly from the roots, and hang where it is cool, but where they will not freeze; or, if preferred, buy of florists, as they are not very expensive. I am wintering forty or more for plunging in my garden next summer.

In BED No. 5, I would have snapdragon, in all of its beautiful

colors. The plants are hardy, and if properly covered with evergreen boughs many old plants will live through the winter, and blossom freely all summer. Make a ribbon bed, or have plants in masses; cover the seeds lightly with fine earth. Pansies set in this bed would be pretty, as they require shade in summer to bloom well.

BED No. 6—Asters. Tall ones for centre (new Victoria) and “chrysanthemum flowered” next, dwarf pyramidal next, and dwarf bouquet for edging. They need a very rich soil, and will blossom better for having a watering of liquid manure occasionally. Start in the house, or buy of florists, or plant in bed where they are to stand. Support tall ones by tying to stakes. A few plants of mignonette in this bed is quite an addition to it.

BED No. 7—Tropaeolums. Tall ones in centre, with trellis for their support; dwarf for edging, and put a few (say five) plants of *Perilla Nankinensis* in a row, or around the tall ones. Buy the latter, or start in the house, as they are tender annuals. The tropaeolums are hardy and can be planted out in border; have plants one foot apart of each of the above.

BED No. 8. This is to be filled with double geraniums, one scarlet and three pink ones; house heliotrope, feverfews, white and buff carnation pinks, one or two rose geraniums, and six gladioli for centre, and portulacca (six or eight plants) to cover the ground; geraniums, carnations and heliotrope to be plunged in pots. Feverfews are hardy and stand our winters well, by being protected. Set bulbs of gladiolus four inches deep, and about the same distance apart; take up in the fall, dry the bulbs, put in paper bags, and keep in a dry cool place. Portulacca is a hardy annual; seeds germinate quickly—plant one quarter of an inch deep.

BED No. 9—Petunias. Double ones for centre; white, crimson and purple, with single varieties in all colors. They can be trained to trellises for the centre, and the single ones tied up or pegged down, just as one chooses. Buy plants, or start seeds in the house; pot some for house in September, or make cuttings; they root easily. A few plants of *Coleus Verschaffeltii*, are an addition to a bed of petunias. Buy plants or get cuttings from some friend; they are tender, and when kept in the house need a great deal of heat.

BED No. 10—Zinnias. Hardy; start plants in heat, or sow out in border; transplant in June, or plant seeds as early as the

middle of May. They need to be tied up and kept in symmetrical shape. White candytuft is pretty among them; keep the soil well worked and loose about the stalks.

BED No. 11—Stocks, or gilly flowers. The principal colors of the stocks are crimson, white, purple, pink and straw. They are handsome for ribbon beds. I would add a group of gladioli for the centre of the bed. Start stocks in house for early blooming and transplant to border when the plants are four inches high if the ground is sufficiently warm. Pot plants for house before early frosts; keep in conservatory or cellar. Sweet allysum, a fragrant dwarf plant, will look well in this bed. Set stocks one foot apart, with plants of sweet allysum between them.

BED No. 12. *Phlox Drummondii* in all colors. Start in house, or plant in the bed, as the seeds are hardy. Set in masses, or it would be more pleasing to see the colors in ribbon style. Set one foot apart; plant seeds one quarter of an inch deep. They need a rich soil to do well.

No. 13—Fragrant honeysuckle, trained over an arbor forming an entrance to the garden.

No. 14—Rose John Hopper; May pink or violets.

No. 15—*Yucca filamentosa*, or palm lily; purple and white candytuft.

No. 16—*Dicentra spectabilis*.

No. 17—Clump of London Pride.

No. 18—Purple dahlia.

No. 19—Buff or straw colored dahlia.

No. 20—Group of salvias. They are very ornamental; buy or start in house. Transplant when the weather gets pretty warm, say about the tenth of June.

No. 21—Rose colored peony.

Nos. 22 and 23—Climbing roses; Queen of the Prairie, on trellis.

No. 24—White peony.

No. 25—Group of gladiolus.

No. 26—Double poppies, white fringed and scarlet, in masses.

No. 27—Dwarf hollyhocks.

No. 28—Crimson dahlia.

No. 29—White dahlia.

No. 30—Rose, General Jacqueminot.

No. 31—Climbing rose, Baltimore Belle; trained to trellis.

- No. 32—Climbing rose, Russell's Cottage; trained to trellis.
 No. 33—Garden heliotrope.
 No. 34—Crimson peony.
 No. 35—Group of everlasting flowers.
 No. 36—Columbine; white, pink and purple.
 No. 37—Chrysanthemums; white, buff and crimson.
 No. 38—Fuchsias; white, purple and crimson—two of each kind.
 No. 39—Tree peony.
 No. 40—Lantanas; six plants.
 No. 41—White dahlia.
 No. 42—*Tigridia*, (Mexican tiger flower.)
 No. 43—*Tritoma uvaria*.
 No. 44—*Digitalis*, (Foxglove.)
 No. 45—Larkspurs; purple, pink and white.
 No. 46—*Lobelia cardinalis*.
 No. 47—Four o'clocks; all colors.
 No. 48—White lily.
 No. 49—Yellow lily.
 No. 50—*Spirea Japionica*.
 No. 51—Bed of pinks; *dianthus* and *Heddewigii*.
 No. 52—*Campanulas*; purple and white.
 No. 53—Marigolds; velvet, or *tagetes signata pumilla*.
 No. 54—African Hibiscus, four or five plants.
 No. 55—Fragrant Honeysuckle.
 A.—Cannas; the ground covered with myrtle or ivy, or any running plant.
 B.—White phlox, perennial; with roses Pius IX. and Auguste Mic, and between roses and in front of phlox have a pot or vase of amaryllis.
 C.—In corner, morning glories; moss rose Princess Adelaide, roses Louis XIV. and white Scotch; with dwarf convolvulus between roses. If there is room a dahlia or two can be set out.
 D.—Purple perennial phlox, ricinus, ornamental grasses, pink and white dahlias.
 E. E. E. E.—Sweet peas, trained to trellises.
 Tie up plants to stakes when necessary; keep every bed in neat condition, by removing weeds, cutting off old stalks and dead leaves, and wilted blossoms, if not wanted for seed.
 Tie dahlias to stakes when set out; label as soon as they blossom, if the colors are not known before setting out. The tubers

must be taken up by the first of November, and exposed to the air long enough to remove any excessive moisture, then pack in dry sand and put in a dry, cool cellar. Start in sawdust early in spring. *Soil must not be rich.* Roses require a rich soil; and in the spring cut off all old wood and weak last year's growth, and remove slugs, lice, and other insects, by washing with whale oil soap. Manure should be applied to the surface of the soil about the bushes, in November, to protect the roots, and they should be laid down and covered with earth or evergreen boughs. Honey-suckles, woodbines, wistarias, &c., should be taken from arbors, trellises, walls and pillars, and laid down and covered, in the same manner. Shrubs like Wiegela, rose acacia, Japan quince, snow-balls, Mahonia and deutzias, can be tied up to represent small trees in a yard, by a little care in choosing evergreen boughs to do it with. Large shrubs, like syringas, need to be tied up, to prevent the snow from breaking the branches.

The soil and location of a garden are important things to be considered. If clayey subsoil, it should be thoroughly drained. If sandy loam, there is not so much need of draining. Good, rich manure should be thoroughly worked in, in the spring, and the beds levelled off, and soil freed from lumps, rocks, &c., as early as possible. A southerly exposure is preferable for a garden, and it should be protected on the north side by an evergreen hedge.

In planting seeds care must be taken not to plant the small ones too deep; just cover lightly with fine earth. Larger seeds can be sown one-quarter of an inch deep, and sweet peas four inches deep. Sow hardy seeds as early as first of May; half hardy, from middle of May to the first of June. In transplanting choose a cloudy day, and shade or cover the plants if the sun comes out warm and bright; disturb the roots as little as possible; water for a few days at sunset, if they wilt much, and care for them until they get established. I would sow seeds of pansies, sweet allysum, mignonette or violets in every bed, to cover the ground, and all plants grow just as well (and I think better) for having a few of these to keep the ground moist.

Edgings form another very important feature in a garden. Grass makes a neat edge if properly cared for, but it requires too much care to be very popular. Pansies, iris, daisies and violets make neat edgings, also some species of pinks, and they require but little care after they are set out. I have used house leeks for years, and every one that sees them admires them. They are

hardy, grow rapidly, and retain their color (a pale green) the whole year, and they require so little care I can recommend them for any garden. The main walk or walks that are much used, should be straight or in easy curves, and four feet wide. The other walks can be as narrow as two feet. The best walks are made of small stone, oyster or clam shells covered with fine gravel and sifted coal ashes. They, like the garden, should be kept free from weeds and debris and present a smooth finished surface.

In submitting this I have selected flowers of the most easy cultivation, and have tried to arrange them according to height and colors, and to give general directions for their care. Many more could have been selected, but I have made this plan with a view to the best show of flowers without great expense or care. It is one I think which any lady can take good care of, with a little assistance in the spring and fall.

PLAN No. 3, BY MRS. LUCY S. SAYWARD OF ALFRED.

In bed No. 1.—The different varieties of zinnia in the centre; next, mixed colors of asters, with a border of pinks. Fill the space between asters and pinks with larkspur, Jacobea, Clarkia, or whatever suits the taste.

Nos. 2 and 3—Double petunia, purple, white, and striped; border of mixed *Portulacca*.

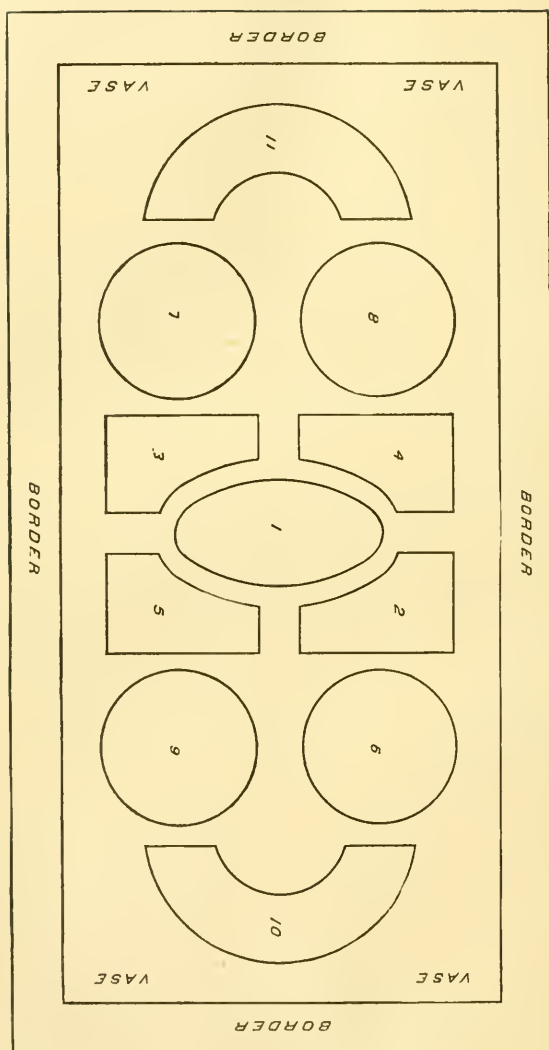
Nos. 4 and 5—*Phlox Drummondii*, mixed colors, border of pansies.

Nos. 6 and 7—Scarlet geranium, white geranium centre, border white candytuft.

Nos. 8 and 9—Silveredge, pink and salmon geraniums, border crimson candytuft.

Nos. 10 and 11—*Verbena* mixed, lantana, heliotrope; mignonette border.

The outside border should be planted with Cypress vines, single petunia, marigold, balsam, chrysanthemum, sweet-william, Canterbury bells, *tropaeolum*, dahlias, tuberose, gladiolus, and anything pretty. It is a nice place for house plants. If the border is by a fence, train all the climbing plants and petunias to that; if not, limber sticks will do. Have them three or four feet long; make hoops by putting each end in the ground, and train to them. Marigolds and gladioli need to be well tied up, or they spread, and do not bloom so well. Vases are very ornamental filled with ver-



PLAN OF FLOWER GARDEN, BY MRS. LUCY S. SAYWARD.

ena, lobelia, tropaeolum, oxalis, silveredge, and scarlet geraniums. If well cared for, and not crowded, they are very handsome. With small beds, flowers can be better accommodated than in large ones, because you can make the soil to suit the plants, and they are easy to keep clean and free from weeds, which is essential to a nice flower garden.

The beds can be built up a few inches above the level, and turf put around, which keeps the form of the beds so it is not necessary to make them over every year, only so far as they need lightening and enriching.

It is difficult to say what shall be put in each bed and border, as every one has a fancy of her own about such things, and there is such a difference in the soil and situation of gardens. There is an almost endless variety of plants, but I think those which I name are the most reliable. In some seasons rare plants do very well, but our early frosts usually cut them off before we are repaid for our labor. The single petunia is not cultivated as much as it should be. It blooms early, and is bright with flowers all summer, and after the first light frosts. In this State seeds do poorly if put in the open ground before June. If you have no hot-bed, it is well to start in boxes, in the house, such plants as zinnia, aster, balsam, petunia, lantana, helitrope, verbena, and all bulbs. If carefully transplanted, they do better and have larger flowers than if allowed to grow where the seed is dropped. Geraniums, lantanas and helitropes, do better to remain in the pots, and be sunk an inch below the surface; we get less root and more flowers. September is the time to start geraniums from cuttings for the next spring. Before the frost comes, the old plants can be taken from the ground. After the earth is dry slip off the pots, wrap the plants carefully up in thick paper, with the earth about the roots, and hang in the cellar. If set out early in the spring in a warm room, they will be ready for the garden in June, before the other flowers come. Flowers should be watered every night at sunset, unless there is rain.

I send you this very simple plan for a flower garden, hoping it will meet your approbation.

SECOND DAY.

EXHIBITION OF WINTER FRUITS.

At 8 o'clock A. M., the members of the Society, and other persons attending, spread upon the table in the room of the Committee of Agriculture, in the State House, a large collection of varieties of fruit brought in for examination, comparison and study—a detailed report of which, prepared by the special committee appointed for that purpose, will be found hereafter. This exhibition was not governed by any rules as to the number of specimens to be exhibited, nor was any attempt made at artistic arrangement. It was only desired that varieties should be correctly named, and that as to specimens “presented for a name” the exhibitor should give a statement of all the facts within his knowledge.

The fruit remained upon the tables during the morning session, and afforded an opportunity for the communication of much valuable information.

Mr. Charles S. Pope of Manchester, was appointed a committee to prepare a report of the exhibition for publication with the Transactions.

BUSINESS MEETING.

At 9 o'clock A. M., the Society was called to order by the President, pursuant to adjournment, and proceeded to the consideration of business postponed from the annual meeting of September.

The annual reports of the Treasurer and Executive Committee were severally presented, accepted and ordered to be published with the Transactions. (See Appendix.)

The election of officers for the current year was completed by filling vacancies in the Board of Trustees.

The following orders were adopted:

That the Committee on catalogue of fruits be continued as a Standing Committee.

That the resident member (Mr. McLaughlin) of the Fruit Committee of the American Pomological Society, be instructed to prepare a list of fruits for Maine, to be inserted in the published lists of that Society.

That the chair appoint three or more delegates to represent this Society at the biennial session of the American Pomological Society, to be held at Chicago during the present year; and that such delegates have power to appoint substitutes.

The chair appointed as delegates under this vote, Messrs. Henry McLaughlin of Bangor, Joseph Taylor of Belgrade, and George B. Sawyer of Wiscasset.

The following preamble and resolution was presented, discussed and adopted, viz:

"Whereas, the annual reports of the Secretary of the Board of Agriculture have been and still are much esteemed by the people of the State, and are every year distributed among the most skillful agriculturists and the most intelligent and liberal patrons and promoters of the agricultural arts, therefore

Resolved, That while we recognize the necessity of strict economy in the State expenditures, we deprecate any reduction of the appropriation for the publication of this most useful report."

Voted, That the thanks of the Society be and hereby are tendered to the members of the House of Representatives for the use of their Hall for the meetings of the Society, and that an invitation be extended to them to meet with us and assist in the examination and discussion of the fruit now on exhibition.

Mr. McLaughlin was appointed a committee to communicate the invitation; and the Society having taken a recess, the Representatives came in and assisted in the disposition of the fruit; after which

Adjourned.

AFTERNOON SESSION.

The Society re-assembled at two o'clock P. M., and resumed the consideration of the report of the Committee on Fruit Catalogue. (No reporter being present the discussion is necessarily omitted.)

Voted, That the Committee be instructed to prepare a column of "remarks," to accompany the tabulated list of fruits, and a complete description, with outline cuts of such fruits as they may deem advisable, and of new or local varieties, so far as cuts can be obtained; also to complete the arrangement of the list for publication in the forthcoming report of the Secretary.

Voted, That the report on grapes and small fruits be recommended for completion.

The subject of the time and place for holding the next annual exhibition was discussed at length by the members, and it was

Voted, That the Executive Committee be recommended to make arrangements for holding the annual exhibition of the ensuing

season in connection with the fair of the Maine State Agricultural Society if they deem it for the advantage of the Society.

The Secretary presented the following resolutions which were adopted, viz :

Resolved, That while we duly appreciate and gratefully acknowledge the support and confidence extended to this Society by the people of the State, we feel that the work which we have in hand, while it demands earnest and persistent labor on the part of those who are devoted to it, calls for an increased and active membership and a larger material support.

Resolved, That the thanks of the Society be and hereby are tendered to the editors and publishers of the newspapers of the State for the general interest taken by them in the publication of our transactions during the past year, and especially to the *Maine Farmer* for the large amount of space devoted in that paper to the discussion of pomological subjects and the interests of the Society.

Adjourned.

EVENING SESSION.

The Society re-assembled at 7½ P. M.

Mr. Goodale, from the Committee on Catalogue of Fruits, presented the report on pears, which was accepted and discussed in detail, and recommitted with the same instructions as were adopted in reference to the other portions of the committee's report.

Voted, That the thanks of the Society be tendered to the members of the Committee on Catalogue of Fruits for the careful and satisfactory manner in which they have performed their duties.

Voted, That the Secretary be instructed to forward copies of the annual report of the Society to similar societies in other States and to request an exchange of publications with such societies.

Adjourned without day.

REPORT ON THE EXHIBITION OF FRUIT AT THE WINTER MEETING.

It was not expected when the invitation was sent out for fruit-growers to exhibit at the winter meeting, that the collection would be extensive, as the state of the weather would not permit of the moving of fruit a great distance with safety. But although the thermometer indicated a temperature of ten degrees below zero on the morning of the first day of the convention, a creditable number of specimens were presented from various parts of the State, as will be seen by the list given below, and all in good condition.

One of the objects of the exhibition was to correct errors in nomenclature. There is among orchardists great confusion in relation to names, especially of the newer and less known varieties. Many varieties were shown at this meeting as the American Golden Russet, and perhaps this name is applied erroneously to more varieties than any other.

The President showed several kinds of apples sent to him from Dexter, without names; also, the *Naked-limbed Greening* from Waldo county, and the following named varieties from his own orchards, viz: Baldwin, Hubbardston Nonsuch, Rhode Island Greening, Black Oxford, Northern Spy, Sweet Russet (2 varieties), Deane, Poughkeepsie Russet.

A package of fruit was shown by T. S. McLellan of Brunswick, for a name. Fruit large, flattish, partially striped with dull red on a green ground. Quality good. No one could name it.

Samuel Guild of Augusta, presented some fine specimens of Yellow Bellflower, Jewett's Fine Red, Hubbardston Nonsuch, King of Tompkins County, American Golden Russet, Rockwood and Red Canada; also, the Winter White, an apple not much disseminated, and one variety name unknown.

Henry Ingalls of Wiscasset, exhibited Minister, Mother, English Russet, Jewett's Fine Red, Danvers Winter Sweet, King of Tompkins County, Wagener, Swaar, and one kind erroneously marked Northern Spy.

Specimens of Yellow Bellflower, Noyes, Ribston Pippin, and a sweet apple, name unknown, also, pears Easter Beurre, were shown by Calvin Spaulding of Hallowell.

Fourteen varieties of winter apples were exhibited by J. Pope & Son of Manchester, also a seedling sweet apple.

Several varieties were shown by D. H. Weeks of Riverside, for name, among which were found the Hubbardston Nonsuch, Star-

key, Poughkeepsie Russet and Red Everlasting; the others were unknown.

F. M. Woodward of Winthrop, presented large quantities of several of the leading varieties of winter apples, including Northern Spy, Hubbardston Nonsuch, King of Tompkins County, and Harvey.

Atherton Bros. showed specimens of American Golden Russet, Nonpareil, Heath Sweet, Blue Pearmain, and Red Canada.

Orrin McFadden of Dresden, exhibited specimens of Ribston Pippin, also a variety for name, which was not identified, and a seedling named the Goud apple, (pronounced Goo), accompanied by the following description: Originated in Dresden, where it has been propagated extensively. Tree a profuse bearer and perfectly hardy; forms an upright top. Fruit, medium size, green mostly covered with red; flesh greenish yellow, solid, sub-acid; keeps as well or better than the Baldwin; use, family and market.

The following varieties were presented by Joseph Taylor, Belgrade: Northern Spy, Esopus Spitzenburgh, Blue Pearmain, Hubbardston Nonsuch, Noyes, Grandpa, King of Tompkins County, Rhode Island Greening, Childs, Holmes and Baldwin.

Specimens of Peck's Pleasant and Newtown Pippin, were shown by G. B. Sawyer of Wiscasset.

The Loudon Pippin, Hawley and Rhode Island Greening, by Henry McLaughlin of Bangor.

Hubbardston Nonsuch, by J. A. Varney of North Vassalboro'.

Mrs. D. A. Fairbanks of Augusta, presented the following varieties of apples: Esopus Spitzenburgh, Northern Spy, Black Oxford, Cummings, Sweet Russet, Talman Sweet, Hubbardston Nonsuch, and a seedling sweet apple; also some fine specimens of well ripened pears, among which were the Vicar of Winkfield, Glout Moreceau, Passe Colmar, Winter Nelis, Josephine de Malines, and Easter Beurre.

Alfred Smith of Monmouth, also presented fine specimens of the Josephine de Malines.

Dr. J. B. Bell of Augusta, exhibited several varieties of native and hybrid grapes, well ripened and in good condition.

Respecting the quality of the fruit, we respectfully refer all inquirers to the members of the Legislature, who visited the exhibition room by invitation, and demonstrated their capacity for business by cheerfully and assiduously aiding the members of the Society in clearing the tables.

REPORT OF THE CORRESPONDING SECRETARY,

DR. J. C. WESTON OF BANGOR.

One of the by-laws of the Maine State Pomological Society, as amended January 29, 1874, requires that the Corresponding Secretary shall correspond with other pomological and horticultural societies, for the purpose of effecting an exchange of publications with them, and to present at each annual meeting a report embracing the substance of all such matters contained in these publications as he shall deem of special interest to this Society.

Copies of the first annual report, 1873-74, were sent to the secretaries of the American and Michigan Pomological Societies, and to the Massachusetts, Illinois, Ohio, Pennsylvania, and Wisconsin Horticultural Societies, with the expectation that they would reciprocate. Copies were also sent to all the leading Agricultural and Horticultural Journals of the country, and to many of the prominent pomologists.

We acknowledge with pleasure the receipt of the Proceedings of the last session of the American Pomological Society, the Transactions of the Massachusetts Horticultural Society, Part I., 1874, its Schedule of Prizes, and the Catalogue of its Library; and also the loan, from Mr. Samuel L. Boardman of Augusta, of late Reports of Michigan Pomological Society, and Illinois and Wisconsin Horticultural Societies. We have also received the Public Documents of the National Department of Agriculture. A review of these furnishes the materials of the following report:

The Quarter Centennial Celebration of the American Pomological Society in Boston, Mass., September, 1873, was an occasion of great interest to all fruit growers. Members were present from the States and Territories, and the Provinces of British America. They came from the East and the West, from the North and the South, from remote California—even from youthful Nebraska, representative of the great American desert where sixteen years ago not a fruit tree had been cultivated—and from territories where but a few years since the track of the wild beast and trail of the savage had only marked the soil, bringing the golden, crimson and purple fruits of diversified climes, making a grand aggregate of *over six thousand dishes of fruit*, and a display never surpassed on this continent.

Some were present who could remember the time when there was not an agricultural or horticultural paper, nor a book on fruit culture, published on this continent; when the first horticultural society was established, fifty years ago; when nurseries were few, our fruits mostly of foreign origin, the supply scanty, the demand limited.

Many were cognizant of, or participated in the formation of the American Pomological Society, twenty-five years ago; had observed the indefatigable labors of its members, the wonderful progress made, the beneficial results secured, until now the country is flooded with books, newspapers and periodicals devoted wholly or partly to the dissemination of pomological knowledge. Nurseries are everywhere abundant; new varieties of the different fruits are constantly tested, approved, recommended and cultivated, or if found lacking desirable qualities are promptly rejected, and all regions of our widely extended domain vie with each other in honorable rivalry, to ascertain and cultivate the best fruit for home use, for the market, for exportation,—the supply ever keeping pace with the ever increasing demand.

*“But who can adequately, even estimate the progress of our art, the importance of this industry to our nation? Whose prophetic eye can survey the grand expanse which is to open on our course during the next twenty-five years? Ere that time shall have arrived, much of the unoccupied territory of our country, now greater in extent than that of all our present States, will by the aid of our trans-continental railroads be opened to cultivation, and Columbia River, Puget Sound, and the whole Pacific coast, with its untold treasures, be united with us in the great work of promoting the pomology of this land. * * * * *

“Give us twenty-five years more, and from ocean to ocean, from the Dominion to the Gulf, our hill-sides shall be clad with the vine, our great valleys adorned with orchards and gardens, and the fig, olive and orange of the South and Pacific shores shall rival those of exotic growth. Give us twenty-five years more, and our catalogue of fruits shall be filled with native varieties, dedicated to American pomologists, who by their labors and benevolent efforts have contributed to the wealth of our country and the happiness of its people. But to accomplish this most desirable result, and to fulfill our mission of supplying every section of our country with fruits suited to its own locality, we must rely mainly on those originated on American soil. * * * * *

“From past experience it seems probable that the deterioration of certain varieties of fruits will exist in the future as in the past, and that the same causes, whether from the removal of the forests or from whatever circumstances, will still continue. Hence, the

necessity of raising new varieties to supply the places of those that decline. Happily this degeneracy is confined to the apple and pear, affecting the pear more particularly, while in the cherry, peach, plum, strawberry, and small fruits generally, there are no signs of this deterioration.

"That as fine fruits can be raised from seed here as have been produced in any other country, there is no longer a doubt. * * * In confirmation of this opinion we have numerous instances. Witness the seedlings of the Messrs. Dana, Clapp, Shurtleff and others, which grace this department of our exhibition. In these we have an illustration of what can be accomplished in the space of a few years by the sowing of the seeds of modern varieties. Our clear sky, warm summers and virgin soil are most favorable for propitious results and will conduce to the health and longevity of new varieties.

"Formerly we were obliged to rely mostly on imported kinds for our best fruits, but as time progresses these are gradually disappearing, and their places are filled by those of American origin. Of the forty-three kinds of plums in our catalogue more than half are American. Of fifty-eight kinds of peaches, more than two-thirds are American, and in fact very few others are much in cultivation. Of the nineteen kinds of strawberries, all but three are American. Of thirty-one varieties of hardy grapes, all are American. Thus, of these fruits we have in our catalogue at the present time, one hundred and fifty-one varieties, with the exception of thirty-seven, all of American origin. Thus may we go on rising higher and higher in the scale of excellence, looking forward with bright anticipations to the time when, through the influence of our own and kindred associations, our catalogue shall be filled with varieties of American origin, and every part of our country rejoice in fruits born on the soil on which we live.

"This is the great work of American Pomologists to produce new and fine native fruits best adapted to our own clime and soil. To hasten so desirable a consummation, it is necessary *to plant the most mature and perfect seeds of the most hardy, vigorous and valuable varieties; and as a shorter process, ensuring more certain and happy results, cross or hybridize your best fruits.* * * * *

"The most important achievement of the Society is the Catalogue of Fruits. This was the first attempt in this country to suppress by common consent our inferior fruits from cultivation, and to define the adaptation and value of approved varieties to wide spread territory. When we consider that the catalogue embraces in its columns fifty States and territories, including the Provinces of British America, with great diversities of soil and climate; that some of the new districts have but little experience in fruit culture, and that from them the reports consequently are but limited, we can readily appreciate the difficulties attendant on this great work. It has required a vast amount of patient investigation by Mr. P. Barry, General Chairman of the Fruit Committee, and his able associates and coadjutors of the committee on revision of catalogue. * * * *

"Instead of fifty-four varieties of fruit recommended in 1848, it now contains the names of five hundred and seventy-seven kinds, and with the list of six hundred and twenty-five rejected varieties passed upon by the Society, makes a total of twelve hundred and two on which the Society has set its seal of approval or rejection. An important part of this work, not shown by these figures, is the reduction of the list as compared with former catalogues, by striking out varieties too good to be placed on the rejected list, yet superceded by better sorts. In pears alone, this reduction has been from one hundred and twenty-two to ninety-one kinds.

"It was an important step taken by the Society when it placed its mark of condemnation on the long list of unworthy fruits which were then in our collections, thereby saving to cultivators a vast amount of time, trouble and expense in the propagation of useless varieties. It requires the utmost caution in the future to avoid the insertion in its pages of the names of inferior or insufficiently tested fruits, and to establish a correct nomenclature for all time, so that with every revision of the catalogue it may more nearly approximate to perfection."

To co-operate in this most desirable work is the appropriate duty of the Maine State Pomological Society. It should be its aim to discover and retain the most valuable kinds, to discard the worthless and indifferent and recommend to the different sections of the State the cultivation of those varieties of fruit best adapted to their respective localities, and also to transmit from time to time to the parent Society all the useful information acquired. For want of such necessary information, the list of fruits recommended for Maine is comparatively meagre. It awaits the discoveries, the observations and the experience communicated by our own fruit growers acting collectively through our own organization. Ours then be the task in our appropriate sphere to ascertain the best fruits and make a catalogue of varieties so full and accurate for each region of our widely extended State that no one need to err in the selection. Ours too be the duty to encourage both by precept and example the raising of fruit so abundantly, that it shall be in common use at our homes not only as a luxury but as a necessary article of food, and shall afford a large surplus for exportation to less favored climes. The following is the list already recommended by the American Pomological Society for cultivation in Maine.

Apples—Red Astrachan, Early Harvest, Large Yellow Bough, Porter, Garden Royal, Primate, Ramsdell's Sweet, Danvers Winter Sweet, Ribston Pippin and Black Oxford.

Pears—Beurre Giffard, Bloodgood, Bartlett, Beurre d'Amalis, Buffum, Louise Bonne de Jersey, Fulton, Beurre Superfin, Golden Beurre of Bilboa, Seckel, Beurre d'Anjou, McLaughlin, Beurre Diel, Urbaniste and Vicar of Winkfield.

Plums—Green Gage, Bavay's Green Gage, Imperial Gage, McLaughlin, Washington, Lombard and Coe's Golden Drop.

Cherries—Belle Magnifique, Belle de Choisy, Dona Maria, Early Richmond, Louis Phillipe, May Duke, Late Duke, Reine Hortense, Morrello and Plumstone Morello.

Grapes—(Native) Delaware, Hartford Prolific, Rebecca, Concord, Clinton and Diana.

Raspberries—American Black, Catawissa, French, McCormick, Orange and Philadelphia.

Strawberries—Large Early Scarlet, Longworth's Prolific, Victoria, Triomphe de Gand and Wilson's Albany.

Blackberries—Dorchester, Kittatinny, New Rochelle or Lawton and Wilson's Early.

Currants—Fertile de Paluau, Knight's Large Red, La Versailles, White Dutch, White Grape and Victoria.

Gooseberries—Houghton.

This list needs revision by our own pomologists, for the purpose of adding other varieties, and substituting in some instances kinds better suited to our wants, so that we may have a perfectly reliable State catalogue.

In the discussion on apples, the Duchess of Oldenburgh was reported one of the best in Iowa, Kansas, Western New York, Massachusetts and Louisiana. It is well known that it has been tested throughout Northern Maine, and has uniformly proved hardy, prolific and valuable, both for home use and market. The Porter and Williams' Favorite were uniformly commended. The Red Astrachan succeeded over a greater extent of territory north and south than any other apple known. It was only reported as failing in Iowa and Eastern New York.

Among pears the Doyenne d'Ete, Beurre Giffard, Beurre d'Anjou, and Lawrence, seemed to be popular everywhere. The only objection made to the Beurre d'Anjou was, that in some instances hard lumps appeared on one side which did not become melting. It was agreed that the Rostiezer was one of the best early pears for family use, and that the Howell was hardy and productive, having succeeded well wherever tried, and that the fruit was

beautiful and profitable to grow for the market, but often only of second quality.

*“ Pear blight assumes different forms, and has consequently different causes for its origin. One form attacks trees *gradually*. Its approach is slow, and may be detected for months, and often during the preceding season of growth, before the tree is fully affected. This form may be termed gradual blight, and is seen at all seasons during the period of active vegetation, from early spring until September. The progress is usually arrested by a liberal top-dressing of liquid manure, so far as the roots extend, and a severe cutting back of the branches. This must be done whenever the tree assumes an unhealthy appearance. The cause, then, may be safely attributed to exhaustion, and the remedy consists in replenishing the exhausted supply of plant food. This form of blight is often noticed in orchards left unworked, and where the annual or biennial top-dressing with fertilizing agents has been withheld.

Another, (and this is the most fatal form), attacks a tree or a portion of it suddenly, causing the affected part to blacken in a few hours after the tree is struck. This is commonly termed fire blight. This form is periodical in its attacks, and migratory, as it seldom remains permanent in a locality, but leaves an interval of from ten to fifteen years between its occurrences. The greatest intensity is on its first appearance, which occurs usually when the fruit has attained half of its size; it decreases as the season of vegetation advances, but reappears again the following summer, with less of its previous intensity. After decimating a section of country during two consecutive seasons, there will be an interval of a series of years, during which blight in its other forms may occur; but there will not be a wholesale destruction as during the prevalence of epidemic blight.

Every observation tends to the conclusion that fire blight is caused by zymotic fungus, whose presence is not detected until life is destroyed in the affected parts. This form offers a wide field for the investigations of microscopists, and from their future labors we hope to arrive, one day, at the origin of this fungoid growth. We are unable to arrive at a satisfactory conclusion as to what peculiarities of soil and temperature induce the favorable conditions for the development of this fungoid vegetation.

In the experimental gardens of the Department of Agriculture, at Washington, the following mixture is prepared:

Place a half bushel of lime and six pounds of sulphur in a close vessel, pour over it about six gallons of boiling water, adding enough cold water to keep it in a semi-fluid state until cold. It is used as a wash, and applied to the tree and branches as high as can be reached. It should be applied two or three times during the summer. Since this preparation was used no trees thus treated have been lost, although small limbs not coated with the mixture

* Report of P. J. Berkman and Josiah Hoopes, Committee on Pear blight; American Pomological Society.

were attacked and destroyed. Carbolic acid has also been used, without any perceptible difference in the result, from the lime and sulphur mixture."

This important subject to pear growers was referred to Dr. Thomas Taylor, microscopist of the Department of Agriculture at Washington, for investigation, and it is expected that his report at the next meeting will communicate much valuable information on fire blight and zymotic fungus.

P. T. Quinn, Secretary of the New Jersey State Agricultural Society, in an essay published in the Proceedings of the American Pomological Society, enumerates the following as the causes of the exhaustion of fruit trees: The selection of varieties unsuited to the locality on account of uncongeniality of soil and climate, the neglect to furnish sufficient plant food to nourish the trees and the crops raised in the same ground, allowing young trees to overbear and planting trees too far apart and sowing the orchard down to grass without breaking up the sod for years. He says:

"It is generally known that there are comparatively few varieties that can with any prospect of ultimate success, be recommended for orchard culture everywhere. Even different sections of the same State may need different varieties. It is necessary, therefore, to choose the list for each particular locality after the most full deliberation and investigation, and then to be sure to obtain strong and well grown trees, true to name, from responsible nurserymen. Never buy from a tree peddler unless you are certain he is the representative of some reliable firm. * * * To start with a poorly grown stock is to court disease and disappointment at the outset. It is a most prolific cause of failure; and to have trees prove untrue to name is most discouraging as well as expensive to beginners. * * * *

"From a young orchard of apples and pears, no returns in the way of fruit are expected for six or seven years, and in the meantime the ground is cropped as usual, to pay expenses, often using just enough manure to bring the cultivated crop to maturity, forgetting or overlooking the fact that there are two crops on the same ground, each having needs, while only enough manure is applied for one. By this short-sighted economy the trees are pinched, their growth and vigor impaired, and in thousands of instances the orchard permanently injured, leaving what fruit such trees produce at the mercy of insects. * * * *

"In pear culture, particularly, exhaustion and premature death of certain varieties is hastened by neglect in furnishing the soil with fertilizing material, and allowing young trees to overbear. This latter practice has permanently injured more pear trees than all other sources combined. * * * A tree ought not to be allowed to bear a pear, no matter how vigorous it may be, until it

has been growing in place five or six years. Under proper treatment, by this time the tree will be of good size, the roots well established, and the branches strong and capable of carrying a crop without injury.

"Another and productive source of exhaustion results from planting trees too far apart and devoting the intervening spaces to grass. When apple trees, for instance, are set forty feet apart each way, and pear trees twenty-five feet, it will take at least a quarter of a century, under the highest culture, for the trees to shade, and occupy the whole ground; hence the temptation and common practice often is to sow such an orchard down to grass, and on account of the inconvenience of plowing among trees, and the uncertainty of getting hoed crops to grow well in the shade, the sod is left unbroken five, ten or twenty years. The trees are consequently starved, become unfruitful and prematurely perish." This is the fate of hundreds of orchards or at the best they only "live at a poor dying rate."

To make fruit culture pay the greatest profit, the author of the essay recommends close planting and low heading, so that when they reach the bearing age, the ground shall be given up to the trees. Manure should be applied regularly and the surface kept under the plow, running this implement among bearing trees not deeper than two or three inches.

A NOBLE APPLE ORCHARD.

Probably the largest and most successful apple orchard in America is that belonging to Mr. Robert L. Pell, at Pelham, on the Hudson. The reputation of these apples has found its way to London, and they bring such prices that about the entire crop is shipped and marketed there. A pleasant history of this orchard is given by a correspondent of a Troy paper, who visited it personally:

"Mr. Pell's father, who was noted for his good judgment in agricultural matters, stopping many years ago in the little village of Newtown (Long Island), observed two pippin trees of English origin, whose fruit was much sought for. The one produced an apple tinted with yellow and red, and the other of a green hue, the difference in color being solely caused by the difference in soil. He was so much pleased with the fruit that he determined to create an extensive orchard of a similar kind. The cuttings were obtained from time to time, trees were planted and grafted, and after many years of perseverance and labor the grand orchard was in existence.

Mr. Pell then could show two hundred acres planted with the Newtown pippin alone, and containing 21,000 trees. He then remarked, that if each tree should yield his son one dollar a year it would be a handsome income. His expectation, however, was

greatly exceeded, for some of these very trees have yielded eighteen bushels at a picking.

While so many rich sons fall victims to their own wealth by the vices which haunt prosperity, Robert L. Pell found his tastes better satisfied with his country-seat and its enormous crops. He studied the art of pomology, and learned how to assist nature in her efforts to support mankind.

Commonly speaking, the apple-tree bears every alternate year. Mr. Pell determined to have an annual harvest, and to give his orchard a handsome start he sacrificed the crop of a bearing year. All the apples were picked while green. He had discovered that the germ of the next year's fruit was in existence at the time of the apple harvest, but that the tree would be so exhausted that this germ would fail of development, and a year of rest would follow before another crop could be produced.

Having stopped his trees from fruiting in the manner I have mentioned, he was sure of a crop on what was generally the off year, and he determined to follow this up by a treatment which should abolish the off-year system. He learned that trees require a variety of food, the chief of which is found in potash, lime and soda, and his orchard has been thus fed, with all the success that could have been anticipated. The potash is found in wood ashes, lime is obtained from oyster shells, at low cost, (stone lime being undesirable) while soda is supplied by common salt. An orchard thus fed and judiciously pruned cannot fail of success, and, although, this season (1873) is generally short of apples, Mr. Pell's crop is of usual abundance.

His plan is to fill his barn-yard with swamp muck in the fall. This absorbs the drainage and it is at the same time supplied with the above mentioned ingredients. In the spring it is hauled into the orchard, which is plowed and sown with clover, as an additional fertilizer. A nursery for the purpose of renewing the orchard is a part of the scheme, and most of the latter at present are young and in the most thrifty condition.

During the apple harvest about one hundred men are employed, and the work generally occupies a fortnight. The rule is to pick the trees clean, and not to let go of an apple until it rests in the baskets. The latter are placed carefully on the ground, and the teamster picks them up with equal care and conveys them to the apple-house. This house is one of Mr. Pell's inventions, and he has four in use. They are spacious structures, perhaps 40x100 feet, (such at least, is my recollection from seeing one of them) and are what might be called two stories high. The first story has no windows. You enter by a wide door, and the apples are seen covering the entire interior to a depth of four feet. The upper part of the building has a few windows, and the door is grated, so that when closed there is an ascending draft. The fruit will, while in this place, discharge a very large amount of moisture and thus deliver itself from the chief cause of decay.

An apple house at such a time is really a fine sight. In three days the sweating is done, and the draft removes the moisture. The fruit is then sorted, and all below a certain size is carted to

the cider mill, while the rest is packed for shipment. They are placed in boxes, each of which contains one hundred of the best Newtown Pippins, and at once shipped to Liverpool. Mr. Pell's fruit is as well known there as it is here, and he has adopted the custom which prevails in the orange and lemon trade, viz: of selling it at auction. The sales are largely attended, and the pippins from the Pelham farm are sold all over Europe. They sometimes bring fourteen cents apiece by the box."

This brief account of Mr. Pell's orchard is copied into this report because it imparts information which may be both interesting and useful to all who raise apples in Maine. The same intelligence, the same practical management, the same wise use of capital may produce similar results in respect to the Baldwin and other varieties of the apple which may be successfully raised in the State.

Michigan, which has a latitude but little south of Maine, has a flourishing State Pomological Society, which was organized in 1870. This society has done much the last four years to direct attention to, and encourage the more extended and systematic culture of fruit and fruit trees. It has performed its beneficent work by frequent exhibitions, meetings for discussion, reports of committees who had been appointed to visit orchards, nurseries, vineyards, gardens and farms in different parts of the State, and by means of addresses and papers of great practical utility. The report of its transactions for 1872 fills a volume of 718 pages, and its third annual report for 1873 is a volume of 526 pages. From these volumes the following compilation is made for the Maine Pomological Society:

*"Horticulture ennobles and civilizes. It is an art of such varied character, so comprehensive, that it is enjoyed by the humblest as fully as by the most exalted. It has appealed to all minds ever since earth began to be subdued by man, for nature herself is the artist and teacher with her ever varying landscapes, her changing seasons, her growing and fading colors, her lights and shades, and tints as mutable as the summer clouds.

Horticulture in its most extended sense, is an art of the most comprehensive character. There is none other that cultivates the senses and refines the mind to such a degree, and is so universal in its influence. It not only compels most of the sciences to be its aids, but some of the arts themselves it takes into its service. Agriculture is a science, for its function is to render useful and profitable the earth and its products; but horticulture not only does this, but it renders beautiful whatever is placed on the earth,

* Address before the Michigan Pomological Society, September, 1872, by R. F. Johnstone, Secretary of State Agricultural Society.

or whatever is grown by it, while at the same time it enters into combination with other arts that delight the senses, and afford some of the grandest and most pleasurable emotions of which the mind has any perception. Sculpture and the plastic arts, as well as architecture, are aids to horticulture, and in return horticulture is used to develop their beauties and the results which their artists desire to reach.

But it is only when we consider horticulture in all its connections with several sciences, that we begin to learn how comprehensive is its nature, and understand the reasons why it exerts such a general influence.

Horticulture has its great divisions, which stand in intimate relationship to each other, each of which alone has formed studies for her disciples.

The first division of horticultural science which is apt to engage the attention of a people emerging from a state of settlement is pomology, or the science of the growth of fruits. Only a subdivision of pomology is possible to most fruit growers, because it is closely connected with agriculture. The subdivision to which we refer is therefore commonly known as the orchard, which includes simply the growing of all fruits in the most natural manner, and with the least artificial assistance.

But pomology in its more extended sense comprehends all theory and practice connected with the growing of fruits. Hence, its science comprises :

1. The nature, description and nomenclature of all fruits, and their botanical position.

2. The propagation of fruits and the method of raising new varieties.

3. A knowledge of vegetable physiology, which includes botany.

4. A knowledge of soils and their adaptation to the growth of fruits, which includes chemistry.

5. A knowledge of the history and origin of each kind of fruit, which includes its native habits, and its geographical distribution.

6. The vineries and orchard houses, and the principles of heating and ventilation.

The practice of Pomology comprises :

1. The growing of seedlings and transplanting.

2. The methods of grafting, inoculating, pruning and inarching.

3. The laying out of orchards and their treatment.

4. The care of the fruit crop, and its preparation for market.

5. The treatment of vineries and orchard houses.

6. The management of espaliers and wall fruits.

7. The growing and forcing of foreign plants and vegetables with the aid of artificial heat and shelter.

As Pomology is that division of horticulture which in this State has received the greatest attention, and is one of the most interest to the people, I have given it the most prominent position. You will readily see from the enumeration, that it opens a wide enough field, and that there is much of the ground unoccupied.

In fact, if I ask at the present time, what does the Pomology of Michigan comprise in its practice, what would be the answer? I would say, that it comprised simply:

1. The orchard culture of the apple; and that with regard to this fruit we are as yet dependent for the varieties we grow on kinds originated in other States; that we have settled upon a few varieties as being peculiarly adapted to our soils and our climate as most useful and profitable. That experience has taught us that there are a number of varieties which cannot be grown to the perfection they attain in other States. That we are as yet unsettled in regard to the best methods of the treatment of our orchards. That no successful effort has yet been made to originate any new variety of apple from seedlings or by hybridization, that would supersede any of the kinds now regarded as the best for profitable culture.

2. The orchard culture of the pear is very limited, and we do not grow this fruit to any great extent.

3. The orchard culture of the peach has been found successful over a district along the shores of Lake Michigan, and as far inland as the influence of this large body of water on the atmosphere is found to extend. But the peach is not reliable for a crop in all parts of the State, owing to the extreme cold of the winters.

4. The plum and the cherry are grown to some extent in gardens, but not largely as orchard fruits. The difficulty with the plum is the insect known as the curculio, while the cherry has received but little attention.

5. The small fruits, such as the currant, strawberry, raspberry, and the blackberry, have been lately grown largely for market purposes, and all the varieties grown are sorts introduced from other States, with nothing in their culture to remark as peculiar.

6. Several varieties of the American grape have been successfully grown for some years for market as table fruit, and also for the making of wine. The vineyards for wine making have been principally in Monroe county, a portion of the banks along lake Erie, and some of the land in the vicinity of Monroe, which rests on a limestone subsoil having been found well adapted to grow the grape to great perfection for wine making.

7. The cranberry (*Vaccinium macrocarpon*), and the whortleberry (*Vaccinium corymbosum*), are both indigenous, and are gathered and marketed to a large extent annually, but as yet no attempt to improve either by culture or otherwise has been made.

8. With the exception of the extensive grape houses of E. B. Ward, Esq., in Detroit, no orchard houses or fruit growing under glass has been attempted, or put in execution."

This is a fair summary of the present condition of the pomology of Michigan; and in most respects it is also equally descriptive of the pomology of Maine.

Practical lessons in apple orchard culture, selected from a series of articles by A. O. Pratt of Green, Chenango county, New York.

THE SELECTION OF THE SOIL.

"The two primary or essential conditions are—1st, a *deep* soil, and 2d, a *dry* soil." If either of these conditions are wanting, all attempts at fruit culture will prove comparatively unavailing. It is useless to attempt to raise an apple orchard in a clay or "hard-pan" bed, with the soil, as is often the case, but four or five inches deep. The trees in such cases will exhibit a stunted and unhealthy appearance, will be unproductive and yield at last to premature decay, if not to some sudden gust of wind.

The ground should descend moderately to the east or south, or still better to the southeast, and should be sheltered, if convenient, from the east wind either by being located west of a wood-lot or by planting a row of fast growing forest trees upon the east side. Small stones interspersed through the soil will prove beneficial rather than an objection, especially in a cold latitude. Avoid the extremes of sandy, also heavy soil. The wet places, if any, may be removed by underdraining. The orchard should not be planted in some deep, narrow valley exposed to the frost, where the sun rises late in the morning and sets early in the evening; neither upon the summit of some high hill, exposed to the wind from every quarter, but select as best of all, a deep, dry, hard-wood soil, sloping to the east or south, at a moderate elevation, with little exposure to the east wind, and plenty of sunshine.

PREPARATION OF THE SOIL.

Enrich the soil or ground (green sward) for the proposed orchard, by applying fifty loads of barnyard manure per acre, composting in the formation of the roots of the young trees. Plow shallow and with care. Plant to corn, applying to every three hills a handful of a preparation composed of four parts ashes, two of plaster, one of lime and one of salt. Cultivate thoroughly at least four times during the season, using the hoe to cut down what weeds and grass may appear. The succeeding spring plow from eight to twelve inches in depth. Before dragging, draw off at least the larger stones and plant potatoes; also plant the trees. The third year draw off the stones early in the spring, just after the disappearance of the snow. Give a liberal top-dressing of the preparation of ashes, plaster, lime and salt above described. Use a sharp toothed drag and bush thoroughly, and the garden rake when necessary. Sow oats or wheat, and seed down with a mixture of four parts of timothy and eight of large clover per acre; but sow no grain nor grass-seed nearer than five feet to the trees; and stir the soil about the trees four or five times during the season.

SELECTION OF VARIETIES.

Order the trees direct from the nursery, the smaller trees in preference to the larger ones, or those from five to seven feet in height. Do not select too many varieties. This a very common error, especially with the young orchardist. For a market orchard, depending on the size, select from two to eight varieties of

winter apples. If near a market, plant a few of the early varieties. For a family orchard, one acre, select twelve varieties so as to have a constant succession of fruit for home use from summer to late spring. As fruits vary in different localities, obtain such varieties as are adapted to your own soil and climate.

PLANTING.

Plant in the spring about the first of May, or as soon as the soil is sufficiently dry. Heel in the trees if they arrive too soon, or if any are shrivelled when received from the nursery, bury them, root and branch for some days. They will thus regain their former plumpness. Should any of the roots be broken or mutilated, cut off the same so as to leave the ends sound and smooth. Prune the ends of all the other roots, also the branches about one-third, and if the roots are badly mutilated, at least one-half, so that the tops shall be in proportion to the size and vigor of the roots. At the time of setting, dip the roots of the trees in a bucket of water; dig a space large enough to admit the roots freely and press mellow surface dirt firmly about them, covering them about the same depth as when taken from the nursery. Plant the trees thirty-three feet apart in an exact line and at right angles, using a carpenter's square, and a straight $16\frac{1}{2}$ foot pole, and whatever the slope of the ground carry the rod poles horizontal. If the ground is sufficiently descending for apples to roll freely, in such case let the trees of the same variety be set in rows up and down the hill.

STAKING AND STRAIGHTENING.

During or after planting, set a small stake about two feet from the base of each straight-bodied tree, being careful not to injure the roots, and incline the upper end of the stake toward the tree and unite stake and tree by means of a band of canvass or leather, the ends of which are tacked or nailed to the stake. The object of this is not so much to train the tree erect, as it is to prevent the wind from swaying the tree to and fro, and consequently keeping the fibrous roots in such a continued state of motion as to give them but little opportunity to take a firm hold upon the soil. If the orchard is in a windy locality more than one stake may be required.

If any of the trees contain several short or obstinate crooks, they should be discarded and replaced by others, but the trees which are not much crooked may be made straight in the following manner. Set a stake firmly in the ground near the tree and opposite each crook. Then set corresponding stakes on the opposite sides of the tree, and tie to the stake with strong cord or strips of canvas in such a manner that the body of the tree shall be straight or but slightly crooked. If cord is used for this purpose, insert a strip of thick cloth between the union of the cord and tree, and while tying, adjust the trees with a plumb line, and "sight" through the rows to see if, through some oversight, or otherwise, any of the trees are "out of line;" if so, adjust them.

PRUNING.

Prune with an eye to beauty, symmetry and proportion. A model tree, fully grown, consists of a body straight and perpendicular, about five feet in height, with from two to four main branches of uniform size, equi-distant from each other as may be, and slightly inclined upward, with the general form of the top that of a hemisphere, base downward, with none of the limbs crossing each other, and sufficiently thinned out to admit the air and sunlight. The proper time of pruning is, when the sap is sufficiently active to heal the wound in the least possible time, which occurs in May and June, depending much on the locality. The warmer the climate the earlier should be the pruning. The trees, when set out, should be cut back about one-third of the top, or in proportion to the size and vigor of the roots. For the first three or four years after planting, about one-half of the growth of the limbs of the previous year should be headed back, the upper limbs more, the lower limbs less. If the top is too much inclined to grow upright, it may be made to spread sufficiently by cutting off the outer limbs just above an outer bud or shoot. Each of these buds will soon form a limb, shooting in nearly or quite a horizontal direction. By a proper observance of this simple principle, the top may be made to assume any desired symmetrical figure. After three or four years of this system of pruning, head back the limbs less and less, aiming simply to keep the tree in a proper hemispherical form, and to prevent any limbs from taking a disproportionate growth. Do not allow any limbs to cross each other. Keep the top well trimmed out, thus giving free access to the air and sunshine. Remove all the suckers. Prune with a sharp knife only. These directions adhered to will obviate the necessity of the very injurious practice of amputating the larger limbs. If, however, in some extreme cases, it may be necessary to remove a large limb, apply to the wound paint or a saturated solution of gum shellac in alcohol or grafting wax. Prune and shape the trees as nearly alike as possible, thus giving to the orchard a uniform appearance. Low headed trees are far preferable to those of the opposite sort, even though the lower limbs may touch the ground when loaded with fruit, saving at least one-half the labor in gathering. If planted thirty-three feet apart, there will be sufficient space to drive a wagon between, and as to plowing, this will be unnecessary if the orchard be properly conducted.

MULCHING.

The object of mulching is to protect the roots from the extremes of heat and cold, to prevent a too rapid evaporation of moisture, and to enrich the soil. The substances or materials employed for this purpose, are horse manure, refuse hay or straw, muck, leaves, rotten chip manure, sods, sawdust, tan bark, wood shavings, &c. Mulch in autumn, just before winter sets in, placing the material in a little conical-shaped mound about the base of the tree, and extending so as to cover the ground for a space equal to the extent of the roots, to the depth of from six to twelve inches, according

to the porosity of the mulch; thus horse manure or muck will require a less depth than straw or leaves. It is desirable also to apply a porous mulch after planting, and thereby obviate the necessity of watering, and prevent the loss of trees during the droughts of summer. If the soil be comparatively poor, mulch with the first named, but if rich, use the most porous substances, without regard to their fertilizing properties. But for general use it is most desirable to employ the various fertilizing materials as much as possible in rotation, thus imparting to the roots a great variety of elements necessary to their successful formation or growth. Remove the mulch in the spring so that none of it shall remain within four inches of the tree, and spread it uniformly as may be over the entire surface of the orchard ground.

SCRAPING AND WASHING.

Scrape in the spring, rough, mossy trees, or those infested with vermin. Trees with smooth, healthy bark will require no scraping, except perhaps at the base. Use a blunt scraper, the blade being cut out in a semicircular form. Should the trees vary much in size, more than one scraper may be required. After scraping, wash with soapsuds, for the general health and improvement of the trees, one or two applications with a paint brush being sufficient for this purpose. Weak soapsuds are required for very young trees, strong for the older. Use no whitewash, especially, in the spring.

Cultivating, or management of the orchard ground. We propose to give a few suggestions on the general management of the orchard ground. The soil then having been properly selected and prepared and the trees having been planted, the next thing is to provide a good substantial fence to keep out stock of all kinds in winter as well as during the other seasons of the year. If the soil has been prepared as heretofore directed, there will be annually about the first July a heavy growth of timothy and clover. This should be cut, but the second crop, which will be like the first, should be allowed to remain to enrich the soil and to serve as a protection from the winter's cold or frost. The seed from the second crop, or aftermath, will also prevent the clover from "running out," the large, deep roots of which will tend to loosen the soil, thus keeping it in excellent condition for the trees. If in addition to this the mulch about the trees be spread in the spring uniformly over the ground, no other manure or fertilizer will be required, though plaster may be used with good effect to decompose the aftermath, and wood ashes may be spread over the surface as far as the roots extend. For the first few years at least, no grass should be allowed near the trees; but stir or loosen the soil two or three times each season to an extent nearly equal to that of the roots, and continue this till the trees have acquired considerable growth, or from four to six years from planting, after which they will require less attention in this respect. If the proper kind of soil was selected for the trees, and properly cultivated with the hoe or spade, in such a case plowing will be unnecessary, and

is generally productive of more injury than benefit, mutilating the roots, etc. If in some very extreme case the soil should become turf-bound; better use a heavy sharp-toothed drag.

If through very high cultivation the growth of the tree is too rapid, causing the bark to burst, destroying the tree, this may be prevented as follows: With a sharp knife cut a slip through the *outer* bark of the entire length of the body of the tree, which will materially accelerate its growth for a short time, and remove from it all danger in this respect. If any of the young trees should chance to die or decay, replace with new ones of equal size and of the same varieties. Remove from the ground all the loose stones that may from time to time appear. Care should be taken that no water be allowed to stand or settle about the trees as winter approaches.

In the general management of the fruit orchard, as regards the trees, the ground and surroundings, he who would succeed should give heed to the Scripture injunction, 'Let all things be done decently and in order.'

HARVESTING.

Experience alone must serve as a guide to the orchardist as to the proper time for harvesting fruit. We can only give this general direction: Gather the fruit when fully grown, or at the time when it has received the greatest nourishment from the tree. Ladders of different length, also stairs, are employed for this purpose. If the directions for pruning and the formation of the trees have been followed, the labor of gathering will be materially facilitated. The windfalls should first be gathered and converted into cider, or at least kept entirely separate from the remaining fruit. Pick by hand, select and pack with great care, so as to obviate bruising the fruit. In assorting make two qualities for market and a third for cider or for swine.

Pack in new or clean barrels. Pack one kind only in the same barrel or box; also let the apples be of as uniform size and appearance as may be. The upper layer of apples should protrude somewhat above the chine, and be brought down and headed under pressure. Employ for this purpose a clamp, either patent or home-made. Some operate with a screw, others with a lever. The latter is very simple, and may be easily constructed. For shipping, the pressure system is particularly desirable, as it retains each apple in its place, and hence prevents its being rattled about and bruised. The fruit being barreled, should remain in open sheds till the approach of cold weather. Keep as cool as possible without freezing, before removing to the cellar.

PROFITS OF THE APPLE ORCHARD.

Prominent among all the industries, that of fruit growing, in a pecuniary point of view, stands unrivalled, a single acre in many instances returning a net profit of from \$100 to \$400; and not only of profit but of beauty and attraction. There is this manifest advantage of the fruit orchard over all other crops, for while

the labor required for the orchard is mostly confined to harvesting, the other crops require plowing, finding of seed, cultivating, harvesting, etc., and acre for acre yield in return about one-third the value of fruit. In short, while the apples or fruit require no more labor and expense than most other crops, the proceeds are at least threefold. We would therefore suggest to every farmer: plant largely your apple orchards—*they will pay.*"

INSECTS INJURIOUS TO THE APPLE.

There are numerous pernicious pests which continually prey upon our apple trees and fruit, so that the orchardist, if he would be completely successful, must constantly strive to prevent their ravages, and wage against them a war of extermination. The remaining practical lessons will therefore be on the bark louse, the tent and fall web caterpillar, the canker worm, the borer, the field mice, and the codling moth.

The bark louse or oyster-shell bark louse, (*Aspidiotus conchiformis*, Gmelin), is "one of the worst enemies of the apple orchard.* These are true bugs of the sub-order Hemiptera. Were we to carefully raise the little brown scales at this season, (winter), we should find underneath a cluster of white eggs. This condition lasts from September 1st to June 1st, when the eggs hatch, and the young crawl out from underneath the scale, move slowly about for a week, then fasten to the tree (three to six different stages of growth), inserting their beaks, and by sucking the juice therefrom they do their pernicious work. Soon a close, water-tight scale is formed over them, which is secreted from the body. They continue to absorb and grow till the last of August, when they lay their four or five score of eggs, shrivel and die. In buying young trees, be sure that they are not affected; but if they should be, scrape off the scales before planting. If the apple culturist scrapes his trees, he will not only destroy these scales on the trunk, but will make the bodies smooth, so that destructive larvæ cannot deposit their cocoons under the old loose bark. The bark louse may most effectually be destroyed just at the period of hatching, from the last of May till the tenth of June. For this purpose use a wash of soft soap or whale oil soap and water," or potash and water, one pound to a gallon, and apply thoroughly. This will generally exterminate them; †"but in extreme cases, when the tree is very badly infested, boil leaf tobacco in strong lye, and add to this soft soap, until the preparation is reduced to the consis-

* Prof. A. J. Cook, of the Michigan Agricultural College. † A. O. Pratt.

tency of thin paint. Apply this faithfully with an old paint brush; it will adhere to the trees, at least through the first few rains, and will destroy the last remaining louse." It is well also to invigorate the trees, enfeebled by this pest, by thorough cultivation about the roots, applying wood ashes and other necessary nutriment. In some States the bark louse is fast decreasing in numbers, in consequence of the beneficent labors of parasites. It has been discovered that small mites devour largely the small white eggs. They have, as larvæ, six legs, but as imagines eight. They hibernate under the scales, and are smaller than the eggs upon which they feed. We would welcome them among us as the harbingers of better times, for as they increase the apple tree bark lice must decrease.

Another parasite is the chalcis fly, (*Aphelinus mytilaspidis*) and whether it has found its way to an orchard or not may be easily determined, for when the fly escapes it leaves the door open—a smooth, round hole in the scale, which may be easily detected by a common lens. There are two broods; the first as imagines, appearing early in the season, the second in August or September. Later in the season the larvæ may be found under the scales, usually one, sometimes two. Thus we have a tiny fly, less than .04 of an inch long which in some localities is bringing to nought one of the mightiest pests of our apple orchards. Thus, also, the weak things of the world confound the mighty. Still, we must not abate our activity in their artificial destruction. Speed the day when these natural enemies shall do the work; until then we must not forget to scrape our trees and must make free use of soapsuds.

THE TENT AND FALL WEB-CATERPILLAR.

Our apple trees are also severely injured by a wholesale destruction of foliage. The chief agents of this work are the tent and fall web-caterpillars. The former of these Lepidopterous insects casts its silken net in the spring, just as the tender leaf-buds are opening. The latter, as its name implies, weaves its web in autumn. While a tree denuded of its foliage in spring will die, in autumn such a loss is seldom fatal; hence the tent caterpillar is far more to be dreaded than the full web-worm.

The moth of the tent caterpillar (*Glisiocampa Americana*, Harris,) appears in July, is of a brown color, with oblique bands of lighter color crossing the wings.

* "There is scarcely an insect in Maine more generally known than the one to which I now call your attention, when in its larvæ or caterpillar state; yet they are comparatively few who know the moth or miller into which they change. This insect belongs to the same family as the silk worm. The tent caterpillar prefers the wild or native black cherry (*Prunus Serotina*, Exh.) and next to this is most fond of the apple, although it is about equally fond of the choke cherry, (*Prunus Virginiana*, L.) and of the cultivated garden cherry. I have also observed its tents upon the wild red cherry, (*Prun. Pennsylvanica*, L.) and the shadbush, (*Amelanchier Canadensis*, T.)

The eggs from which these caterpillars are hatched, are laid near the ends of the twigs in a thick band, completely surrounding the branch, and containing over three hundred eggs, which are covered with a thick coating of glutinous matter which serves as a protection against the cold weather. These eggs are deposited on the trees in July or August, and remain through the winter till the early part of May or later, as the season is early or late, when the young caterpillars hatch from them. They usually hatch in wet or moist weather, as the moisture softens the glutinous covering which the young feed upon until they gain sufficient strength to make a move, when they crawl down the branch, spinning a fine silken thread from the salivary glands of the mouth. Having arrived at a fork of a limb they stop and erect a kind of tent for their future residence, by crawling around the spot and spinning their threads in every direction. As the caterpillars grow larger, the original tent becomes too small for them all, and large numbers of them, as they return from their foraging expeditions, rest side by side upon the outside of the tent and completely cover it over, while others coming in will wander about and over the sleeping ones, looking for some place of repose, still spinning the ever-present silken thread, till at last a complete scaffolding is formed above those first in, and thus another story has been added to the tent.

In all cases where I have raised tent caterpillars in confinement, they have taken two meals a day, one about the middle of the forenoon, provided the weather was clear and moderate, and one near the middle of the afternoon. Some, however, have stated that they take a third meal in the night, but I have never seen this. From the observations of others and my own experiments, I am led to conclude that each caterpillar will consume, on an average, about two apple leaves a day, and as each nest contains about three hundred caterpillars, there would be about six hundred leaves destroyed each day, a drain which no tree can sustain for any considerable length of time without great injury. After the caterpillars have attained their full growth they lose their social habits and wander off to find retreats where they may form their cocoons, which are oval, white or pale yellow, and attached horizontally to the under side of the fence rails or other protected places. They usually remain in these cocoons about three weeks,

* Professor C. H. Fernald of the Maine State College.

after which they come out, the sexes pair, and the females lay the eggs upon the twigs of the trees, and the work of that generation is done, and the moths very soon die.

Remedies. There are three measures which I can confidently recommend, whereby these insects may be held in check and the trees saved from ruin :

1. Burn all the cocoons which may be found.
2. Search the trees carefully during the season when they are bare, or in the fall and spring, for the clusters of eggs, and when found, cut them off and burn them. Do not be satisfied with anything short of burning.
3. As soon as any tents are observed in the orchard, they should be destroyed, which may be very readily and effectually done by ascending the trees by means of a ladder or otherwise, and, with the hand protected by a mitten or glove, seize the tent and crush it with its entire contents. This mode is effectual if it be thoroughly done. It should be observed however, that since the caterpillars are quite regular in taking their meals in the middle of the forenoon and afternoon, their tents should be destroyed only in the morning and evening, or possibly in the middle of the day, when the caterpillars are all in the tent, though if my experiments upon them in confinement are to be trusted, I cannot recommend the middle of the day, as there may be many stragglers away from the tent during the warm part of the day. Every tent wherever found, whether on forest trees or otherwise, should be destroyed."

* "The fall web-worm or caterpillar, (*Hyphantria textor*, Harris), when full grown, is an inch in length. It pupates in a silken cocoon. The pure white moth appears in July, and glues its cluster of eggs to the apple leaves. In August and September their unsightly webs are seen by the orchardist, and good taste as well as the good of the trees, call for immediate extirpation."

THE CANKER WORM—(*Geometra Anisopteryx*).

The canker worm, where it prevails in Massachusetts and other localities, is one of the greatest scourges. When they have become established, and have been neglected, their ravages are often very great. In June, when they become extremely voracious, the foliage of fruit trees and noble elms is reduced to withered and lifeless shreds, whole orchards looking as if they had been suddenly scorched with fire. A knowledge of it and its habits will enable us at once to detect it and prevent its ravages, should it make its appearance among us.

† "In the male canker-worm moth the wings are large, very thin and silky, and, when the insect is at rest, the fore wings are turned back, entirely cover the hind wings, and overlap on their inner edges. The fore wings are ash colored, with a distinct

* Prof. A. J. Cook.

† Treatise on Insects of New England, by T. W. Harris, M. D.

whitish spot on the front edge near the tip; they are crossed by two jagged, whitish bands, along the sides of which are several blackish dots; the outermost band has an angle near the front edge, within which there is a short, faint blackish line; and there is a row of black dots along the outer margin close to the fringe. The hind wing are pale ash colored, with a faint blackish dot near the middle. The wings expand about one inch and a quarter. The female is wingless, and its antennæ are short, slender and naked. Its body approaches to an oval form, but tapers and is turned up behind. It is dark ash colored above and gray beneath.

The canker-worm moths generally come out of the ground in the spring, beginning about the middle of March, but sometimes before and sometimes after this time; and they continue to come forth for the space of about three weeks. Occasionally, however, they rise in the autumn and in the early part of winter, when mild weather succeeds the first hard frosts. The sluggish females instinctively make their way towards the nearest trees, and as they cannot fly, being destitute of wings, they creep slowly up their trunks. In a few days afterwards they are followed by the winged and active males, which flutter about and accompany them in their ascent, during which the insects pair. Soon after this the females lay their eggs upon the branches of the trees, placing them on their ends close together, in rows, forming clusters of from sixty to one hundred eggs or more, which is the number usually laid by each female. The eggs are glued to each other, and to the bark, by a grayish varnish, which is impervious to water; and the clusters are thus securely fastened in the forks of the small branches, or close to the young twigs and buds. Immediately after the insects have thus provided for a succession of their kind, they begin to languish, and soon die. The eggs are usually hatched between the first and the middle of May, or about the time the young leaves of the appletree begin to start from the bud and grow. The little canker worms, upon making their escape from the eggs, gather upon the tender leaves. They are most abundant on apple and elm trees; but cherry and plum trees, and some other cultivated and native trees, as well as many shrubs, often suffer severely from their voracity. The leaves first attacked will be found pierced with small holes; these become larger and more irregular when the worms increase in size, and at last they eat nearly all the pulpy part of the leaves, leaving little more than the midrib and veins. When fully grown and well fed, they measure nearly or quite an inch in length, are generally ash-colored on the back, black on the sides, with a pale yellowish stripe on each side of the body; but canker worms of different ages, and even those of the same age, vary much in color. In creeping they arch up the back, while they bring forward the hinder part of the body, and then resting on their hind fleshy prolegs stretch out to their full length in a straight line, before taking another step with their hind legs; hence, from this peculiar manner of moving, in which they seem to measure or span over the ground, step by step, as they proceed, they are sometimes called earth measurers, loopers, or span worms. They leave off eating when about four weeks old, and begin to

quit the trees; some creep down by the trunk, but great numbers let themselves down by their threads from the branches, their instincts prompting them to get to the ground by the most direct and easiest course. They immediately burrow in the earth, to the depth of from two to six inches, make little cavities or cells in the ground, by turning round repeatedly and fastening the loose grains of earth about them with a few silken threads, and within twenty-four hours afterwards they are changed to chrysalids in their cells. From the fact that the female insect is wingless, and must therefore creep up the trunks of trees to propagate its species by laying its eggs where its larvæ can obtain the necessary food, if we can prevent its ascent we can make it powerless and save our trees from harm. This we can effectually accomplish by the application of tar on strips of old canvas or of strong paper, from six to twelve inches wide, fastened around the trunks with strings. The tar must be applied as soon as the insects begin to appear, and renewed as often as necessary, to keep the bands viscid or sticky as long as the insects continue rising. Instead of the tar, melted India-rubber may be used, and daubed with a brush upon the strips of cloth or paper. Worn-out India-rubber shoes, which are worth little or nothing for any other purpose, can be put to this use. This melted juice or substance is so sticky that the insects will be prevented, and generally captured in their attempts to pass over it."

These bands thus prepared, will not only protect our trees from the ravages of canker worms, but will capture or arrest other noxious insects or worms, and prevent their depredations.

THE BORER—(*Saperda bivittata*, Say.)

*"The borers of the apple-tree have become notorious throughout the country for their extensive ravages. They are the larvæ of a native American insect, which doubtless for ages has infested the wild crab, mountain ash, and other related trees. This insect is a brown and white striped beetle, the upper side of its body being marked with two longitudinal white stripes between three of a light brown color, while the face, the antennæ, the under side of the body, and the legs, are white. The beetle varies in length, from a little more than one-half to three-quarters of an inch. It comes forth from the trunk of the tree in its perfected state, in June, making its escape in the night, during which time only it uses its ample wings in going from tree to tree in search of companions and food. During the daytime it remains concealed among the leaves of the tree, upon which it feeds. The female lays her eggs during the night, in June and July, mostly on the bark at the base of the tree, and the young hatch and commence gnawing into the bark within a fortnight afterwards. The larvæ are fleshy whitish grubs, nearly cylindrical, and tapering a little from the first ring to the end of the body. The grub, with its strong jaws, cuts a cylindrical passage through the bark, and the

* Prof. C. H. Fernald.

hole by which it enters is so small that it soon fills up, but in the case of young trees where the borer works along under the bark, the organic connection has been destroyed, and it turns dark, sometimes shrinking so as to form a crack from which the castings fall out, and thus the borer may be detected. The larvæ the first year lives in the bark and sap-wood, and remains in the tree three years, during which the borer will be found to have penetrated eight or ten inches upward in the trunk of the tree, its burrow at the end approaching to and being covered only by the bark. Here its transformation takes place, and it remains in the pupa state some four weeks, when casting off its pupa skin the beetle gnaws through the bark that covers the end of its burrow and comes out of its place of confinement about the first of June."

There is perhaps no surer and better mode of destroying the borer, after it has once entered the tree, than to dig it out with a sharp knife, or to run a wire into the holes and pierce the borer; but to prevent the beetles from laying their eggs upon the trunks of the trees, both Dr. Fitch and Prof. Riley, the accomplished entomologist of Missouri, very highly recommend that strong soap-suds be applied upon the trunks of the trees, from the limbs down close to the ground, first removing an inch or two of the surface of the ground, replacing the earth when done. Either soft soap or common bar-soap may be used. It would be well also to put a piece of soap in the principal crotch of the tree, that it may be washed down over the trunk by the rains. This application should be made in May, or before the beetles are ready to lay their eggs, and repeated in June and July, so that the bark shall not lose the protection of the soap during the season. Mr. A. O. Pratt of Green, N. Y., recommends an ounce of carbolic acid to every fifty young trees, mixed with three quarts of strong soapsuds; apply with a paint brush to the body of the tree, particularly at the base. Should a heavy rain occur immediately after, then make a second application, and also another in the course of a fortnight.

"If through neglect to use this treatment the borers girdle a young tree, proceed as follows: With a sharp half-inch chisel make from six to eight incisions downward in the bark and wood just below the girdle, and in a similar manner a corresponding number above the girdle. Then from a vigorous tree cut several sprouts of the proper length, wedged-shaped at both ends, and fit the same in the incisions, thus forming a complete connection for the sap. Wax the points of contact, also the girdled portion, bank high with dirt, prune thoroughly and the tree will survive."

* "The flat-headed borer, (*Chrysobothris femorata*, Fab.) works very much as the other, except that it penetrates not so deeply,

eating usually little but the sap-wood and inner bark, and completes its growth in one year. It has great capacity for mischief, sometimes entirely ruining thrifty young trees, even eating through them. The second segment decreases in size. So the larvæ appears to have a tail. Both of the appletree borers pupate in a cocoon made of their own chips. The beetle which comes from this second borer, is smaller than the other; color, a greenish black glossy lustre. The method of treating this insect is the same given for the Saperda."

GIRDLING BY MICE.

Where field mice are abundant, it often happens that thrifty young trees are completely girdled and ruined by them. They sometimes work unsuspected and concealed under the snow using the mulch for their winter quarters. In localities where they are known to exist, the trees may be preserved from their destructive gnawing by encasing the base with some metallic substance. *"Take old tin pails, at least eight inches in height, cut up in strips of suitable width, winding one about the base of each tree. If not enough pails can be obtained, try old stove pipe, or any refuse tinware, as old tin boilers, etc., or if needs be, apply to your neighbors or to the tin shop. These metallic cases should be placed about the trees late in autumn just before banking and removed in the spring, and be continued until the trees have outgrown their sleek-haired antagonist, all of which can be accomplished with very little labor and expense. This preventive has proved infallible, not having failed in a single instance."

Having now treated of the insects injurious to the tree, we proceed to consider the insects which prey upon the fruit.

THE CODLING MOTH OR APPLE WORM—(*Carpocapsa pomonella*,) L.

The apple worm has worked very generally in our State for a series of years. Thousands upon thousands of bushels of apples have been destroyed each season, and hardly an orchard has escaped its miserable mining.

†"The codling moth is an imported insect. There was a time when it had no existence in this land, and it furnishes us with an excellent illustration of the importance of preventing the importation of noxious insects. If we had had the knowledge we now have, we might easily have prevented its introduction, thus saving the immense loss which it has caused. The mellowing and vivifying influence of the vernal year causes our codling moth to burst the

* A. O. Pratt.

† Lecture on Entomology by Prof. C. V. Riley, State Entomologist of Missouri.

silken cerements which had held and enraptured it during its long winter torpor and sleep. It escapes from the cocoon the latter part of June and the first of July, and after meeting her mate, the female flits from tree to tree during the night only, laying an egg in the blossom end of one apple after another, just about the time the blossoms are falling and the fruit is forming, and as each lays from two hundred to three hundred eggs, she thus spoils as many apples.

In about ten days this egg hatches, producing a worm which makes for the heart of the young fruit. There it riots around the core, causing perforations and excavations filled with its own excrement. It takes about twenty to thirty days to attain its full growth. It has then changed color, and the head and cervical shield, which were formerly black, have become brown. This larvæ now issues from the fruit. It generally leaves the fruit during the night, either by letting itself down by a silken web, or by crawling down the trunk of the tree—about one-half get to the ground one way and half the other. Its object in descending is to find some sheltered spot in which to spin its cocoon. Having found this place, it begins to spin its cocoon, which it always covers on the outside with the particles of the bark of the tree. The normal spinning place is under the loose scales of the bark of the tree, so that it is very difficult to find it. Within this cocoon the larvæ changes to a chrysalis. This stage lasts about twelve days, during which time it remains without food or motion. The chrysalis is of a bright mahogany brown color, and has across each of the rings of its hind-body two rows of prickles by the help of which it works its way partly out of the cocoon, and gives forth the moth. At first the wings are damp. You can see them expand or grow. They are little pads when they first come out of the chrysalis, but in the course of ten minutes they are fully expanded. This moth is inconspicuous, because it is entirely nocturnal in its habits. It is brown, has two large spots near the tips of the wings of brown and of a metallic lustre and is very pretty."

T. W. Harris, M. D., gives the following more full description of the codling moth: "The fore-wings, when seen at a distance, have somewhat the appearance of brown watered silk; when closely examined they will be found to be crossed by numerous gray and brown lines, scalloped like the plumage of a bird; and near the hind angle there is a large, oval, dark brown spot, the edges of which are of a bright copper color. The head and thorax are brown mingled with gray, and the hind-wings and abdomen are light yellowish brown, with the lustre of satin. Its wings expand three-quarters of an inch. This insect is readily distinguished from other moths by the large, oval, brown spot, edged with copper color on the hinder margin of each of the fore wings."

*"In this manner the transformations of this little moth are

gone through; those transformations which, from time immemorial, have been looked upon as emblematic of man's immortality—the grovelling worm representing our earthly condition. There are two broods each year. This was long suspected by us in the West, and I had the honor of demonstrating it. The moths of the second brood pair as before and the female lays her eggs in the calyx of the apples for a second generation of the worms; and hence much fruit will be found to be worm eaten in the autumn and winter.

I will state the difference between the first and second broods. In the first the egg state lasts about ten days, the larvæ state about thirty days, the chrysalis state twelve to fourteen days. The second brood, however, remains in the larvæ state all through the winter, no matter whether it leaves the fruit in August or November. This fact I first recorded in this country, not knowing that the same fact had been recorded by a French author in 1850. The larvæ of the first brood frequently co-exist with those of the second, thus the later individuals of the first brood will be frequently found in the same apples as the earlier individuals of the second.

Now let us make a few practical suggestions. First, I will refer to the direct killing of the insect. We can take advantage of the larvæ habit. You are all conversant with the different kinds of bandages that have been employed for this purpose. The main point I wish to convey is, that whatever bandage is used it should be placed around the tree by the first of June, in this latitude, Michigan; or it may be delayed a little longer in the more northern parts of the State with impunity; but it is safe to have them on by that time. They should be examined six or seven weeks after the blossoms fall from the trees. They should then be examined four times, at intervals of ten days, and once after the apples are all taken off the tree.

Now with regard to the best kind of bandage—"Wier's apple-worm trap." (This is a patented device, invented by D. B. Wier, of Illinois, on trial by orchardists. This trap consists of two or more pieces of shingle or thin boards fastened together at the middle. One or more is fastened to the body of the tree by a nail or screw.) "Fully resolved to test this trap thoroughly, in comparison with other methods of allurement, I commenced, (having of course purchased the right to use), as early as the first of May to prepare a number of trees, as follows: 1st. With Wier's trap screwed on in different positions, some trees having single traps, either on the north, south, east or west sides, and placed at different heights from the ground, and some having as many as three traps. 2d. Strips of old sacks, four inches wide, and lined on one side with pieces of lath tacked on transversely, and at such distance from each other that when brought around the tree they formed an almost complete wooden ring. 3d. Bandages of various kinds of rag or cloth. 4th. Hay ropes. 5th. Paper bandages, made of the cheapest kind of straw paper, folded several times, and in widths varying from three to six inches.

In order to insure the utmost accuracy, these several traps were

examined every twelve days throughout the season, and a careful account kept of the worms or chrysalids found under each; and where it was a question as to the comparative merits of the different traps, they were placed on trees of the same variety. The results of these experiments—not to waste space with the detailed array of figures—may be thus summed up:

No apple-worms were found until the 14th of June; and though many other insects had previously taken advantage of the shelter, *not a single plum curculio was found*. While, therefore, there is no harm in having the bandages on early, in ordinary seasons, little if anything will be lost by waiting till the first of June. Where three of the Wier traps were on the same tree, I obtained more worms than where there was but one; and where there was but one, there was no difference in favor of position as regards direction or altitude. The lath canvas encircling the tree, secured on an average five times as many worms as any single Wier trap. The rag, paper, and hay bandages allured almost as many, and either kind more than the single Weir trap.

Time, expense and efficiency considered, so far as one year's comparison will warrant conclusions, I place the different materials enumerated in the following order of merit:

1. Paper bandages. Common straw wrapping-paper, 18 x 30, can be bought for sixty cents per bundle. Each bundle contains two hundred and forty sheets, and each sheet folded lengthwise thrice upon itself will give us eight layers, between two and three inches wide, and be of sufficient length to encircle most ordinary trees. It is easily drawn around the tree and fastened with a tack, and so cheap that when the time comes to destroy the worms, the bandages containing them may be detached, piled in a heap and burned, and new ones attached in their places. If eight bandages are used to each tree during the season, the cost will be just two cents per tree, and the owner could well afford to treble the number of sheets and keep three on each tree, either together or in different places.

2. Rags. These have very much the same effect as paper, but are more costly and difficult to get of the requisite length. Where they can be had cheaply, they may be detached from the tree and scalded with their contents.

3. The Wier trap is perhaps the next most useful; but both cost and time required to destroy the worms are greater than in the first two methods.

4. The lath-belt is the very best of all traps, as far as efficiency goes, but is placed fourth on the list, because of the greater cost and trouble of making. On the same kinds of tree (Early Harvest), and in the same orchard, I have taken with this belt, between June 15th and July 1st, as many as sixty-eight and ninety-nine larvæ and pupæ, against fourteen and twenty in the single Wier trap.

5. Hay bands, on account of their inconvenience, I place last.

The experiments were mostly made in a large and rather neglected orchard. All these methods are good, and the orchardist will be guided in his choice by individual circumstances."

Another effective device for entrapping the worms, not mentioned by Mr. Riley, is to encircle the trees with a band made of a thin slice or shaving of wood, like that used for veneering or for manufacturing berry boxes. If one band is not long enough to surround a large tree, two or more can be used. The same bands may be used more than one year. It is easy to unwind them as often as necessary to destroy the worms and to replace them. To subdue this pest it is important that all in the neighborhood shall coöperate to entrap and destroy every worm hatched in their orchards, so that no moths shall be produced to fly from one orchard to another to spoil the fruit.

"I should state here, that all these bandages are most effectual on young and smooth trees; because on older ones where the bark is rough, a great many worms spin up before they leave the tree, and before reaching the bandages, and others spin up below the bandages, hence the importance of scraping off all the rough portions of the bark which would harbor these worms, also to keep the ground under the trees smooth and clear of all rubbish under which the cocoons may be found. The worms will always be attracted by the most cosy place of shelter, whether that be afforded by rough bark, any trap, or rubbish on the ground in the vicinity of the tree.

We can also do much by destroying the worms before they leave the fruit. It has generally been recommended to pick up all the apples, or cause them to be devoured by hogs or sheep, but many varieties of the apple trees do not drop their fruit until after this worm has issued. The absence of the worm is generally known by the mass of frass on the outside of the apple. Now, it would be futile to go to a great deal of expense, when the worm had left before the fruit fell from the tree. With regard to pears, I have been informed that the worm invariably leaves before the fruit falls from the tree.

A few words as to its food plants. The apple is essentially its food plant, but in late years I have seen it in pears, plums and peaches, and it breeds in wild crabs. There are many indirect ways of fighting this insect, first of all by encouraging its parasites. I have discovered that two parasites prey upon the codling moth. Some of the college students before me may want to know what I mean by parasites. If I told you of a bug that deposited its eggs on the bodies of sheep or other animals; that that egg hatched out into a serpent, which fed and flourished in the fatty portion of the sheep, without injuring it for a time, apparently; that on the contrary, the sheep so infested would be able to live without food, whereas without the parasite it would die; that after a time the serpent ate its way through the sheep, burrowed into the ground, and after remaining there an indefinite time, would struggle through the earth and issue as a bird, like its parent, the story would appear ridiculous. Yet it is hardly more wonderful than the actual facts of parasite insect life.

But I will illustrate the parasite theory of the insect world by showing you the tomato worm. (Here the lecturer illustrated, at some length, the curiosities of parasitism by means of drawings on the blackboard, which cannot be produced here.) There is a peculiar little microgaster, a little fly that comes along and invariably settles on the back or head of the tomato worm, knowing very well that it cannot there be injured. It punctures the skin of that worm and inserts an egg, or perhaps forty or fifty. The maggots hatched from these eggs feed on that worm, which in time becomes sickly, until at last the little parasites are fully grown, and then they spin cocoons on the back of the worm, from which eventually little black flies, like the parent, issue. Now, this is primary parasitism; but there are secondary, tertiary, and even quaternary parasites. And so it is, in the language of Swift:

‘ So naturalists observe a flea
Has smaller fleas that on him prey;
And these have smaller still to bite ’em,
And so proceed, ad infinitum.’

We frequently have no less than four distinct parasites feeding on one another, and all of them on a vegetable feeder. True parasites, as distinguished from cannibals, invariably and necessarily are much less in size than those upon which they prey. I have mentioned two parasites on this apple-worm. I will try to describe one; it is the *Macrocentrus delisatus*. This fly punctures the worm while yet in the heart of the apple, and spins its cocoon inside the cocoon of the apple worm. This is a yellow fly; the other is a black fly, *Pimpla annulipes*. Instead of destroying it before it has assumed the chrysalis state, it does not destroy it until after.

Besides these, I know that two cannibal beetles—the Pennsylvania soldier beetle, and the two-lined soldier beetle, as well as the ants and cockroaches—destroy it as it leaves the fruit. Then there is a species of *tragosita*, which Dr. Le Baron and I have found in the bandages, destroying the worm. I mention this to show that it has its enemies notwithstanding that it lives in the centre of the apple, and descends from the tree at night.

With regard to liquids and lights, they are of no practical importance. Both modes kill as many of the enemies of the codling moth as of the moth itself. The moth has a short tongue, and may feed to a slight extent on liquid sweets, but that it is attracted by them I do not believe; but certain kinds of beetles which prey upon it are so attracted. The codling moths are attracted by lights very slightly indeed. If you have a light in the orchard, and some way to secure them, you will find a few of them among hundreds of other species. They are very rarely found around our lamps. I have tried it, and even where insects pattered on my windows, making a noise like a hail-storm, and got into the room, I would very rarely find codling moths among them, though I knew they were abundant in apple trees infested by them not two rods away. It is of prime importance to destroy the winter cocoons in our cellars and storehouses. The necessity of destroying them becomes apparent, because we keep them out of the way of the natural enemy that might otherwise destroy them. In the spring all the

boxes or barrels in which apples have been stored should be carefully examined for the cocoons of those worms which were in the apples when they were gathered. They may often be found under the hoops of the barrels.

To give you briefly a summary: The codling moth is an imported insect. Place no confidence in the light and bottle systems, but rely on bandages; have your bandages on by the first of June; examine them six weeks after the blossoms fall, and then four times subsequently, at intervals of ten days, and then once when the fruit is gathered; be sure to destroy the cocoons in cellar or storehouse; and lastly, encourage winter birds."

PLUM CURCULIO—(*Conotrachelus nenuphar*, Herbst.)

Destructive as the codling moth is to the apple, even more injurious is the curculio to the plum. It is the greatest obstacle to the successful cultivation of this fruit. If unmolested, it not only severely thins out the fruit, but often destroys the whole crop of the choicest varieties. This insect belongs to the weevils having a snout, and is single brooded.

*"The little dark brown beetle or weevil makes a crescent-shaped slit in the side of the young fruit, by means of the snout with which it is provided, raising the convex side and depositing an egg under it. Each female has from fifty to one hundred eggs, and deposits from five to ten a day; her activity varying with the temperature. The egg hatches out in a short time, and the larvæ eats into the stone, when the fruit falls prematurely from the tree and the larvæ escapes, making its way into the ground, where it undergoes its transformations. After the beetles come from the ground, they feed on fruit as long as that lasts, gouging holes into it with their snouts. After the fruit is gone they feed on the leaves of the trees, and when nothing else is to be had, they feed on the bark of twigs till cold weather comes on, when they go into winter quarters, hibernating, according to Riley, under all sorts of shelter in the woods, generally near the surface of the ground. In the spring they commence as soon as warm weather fairly sets in, and as soon as the plums are a little grown the females lay their eggs for another generation.

It is the habit of this beetle, in common with many others, if suddenly jarred to curl up and fall. And from this habit comes a sure remedy. Spread a large sheet of white cloth under the tree, and give it a sudden jar, as striking it upon the end of a limb which has been sawn off; the curculio will fall upon the sheet and may be collected and destroyed. Morning and evening are the best times to jar the trees. An additional recommendation is, to spread small pieces of board under these for the beetles to hide under during the day, and by turning these over they may be found and destroyed. It has occurred to me, that since the larvæ has to

work its way into the ground to undergo its transformations, where the ground is clear it might be rolled and otherwise composted so that the curculio could not readily work itself down, and thus it might perish upon the ground from exposure to the sun."

Mr. W. H. Ransom of Benton Harbor, Michigan, invented a simple curculio trap which has proved quite effective. His process of trapping the curculio is thus described :

"First remove everything away from beneath the tree, and make the earth as smooth as it can be made; on this depends largely the success of the trap. This being done, take pieces of bark as large as your hand or a little larger, and place them flat side down and against the trunk of the tree. Jar the tree occasionally to dislodge the insects. Examine your trap every morning and catch and kill those you find concealed beneath your bark. This has been used several years with satisfactory results."

As soon as the little crescent mark is discovered, the plum may then be saved, as we know by experience, by promptly removing the newly laid egg with its covering, with the point of a knife or finger nail, and the delicious green gage, McLaughlin, and other choice kinds saved from ruin in this way will well repay the labor. All the plums stung by the curculio which fall prematurely to the ground, should be picked up immediatly and destroyed with the larvæ they contain, and thus we may much diminish the number of these harmful insects and make our labor less the next season. Curculios are also found in apples, cherries and peaches, but it is in plums that they are most to be dreaded.

In consequence of the destruction of forests supplying the natural food to noxious insects, the importation of foreign species of our insect foes, the great increase of food plants upon which they prey, by our pomologists and farmers, and the decrease of birds which have been ignorantly and foolishly destroyed, insects injurious to fruits, grain and other crops, have multiplied in some sections to a fearful extent. Man with all his wisdom and intelligence has been able to prevent their ravages only to a limited extent.

It is estimated that \$3,000,000,000 worth of property has been destroyed annually in the United States by these liliputian foes. Yet in the economy of Nature, insects subserve a most useful purpose, they distribute pollen, they fructify flowers. Indeed some flowers would be barren and unproductive of seed or fruit without their agency, and generally they do much to compensate for manifold evils resulting from certain insect pests. Hence we need the constant investigations of entomologists to enable us to

discriminate between friend and foe, between beneficial parasite and mischievous insect, that we may encourage or cherish the one and repress or destroy the other.

We need, too, the coöperation of the birds whose fleetness of wing, sharpness of vision and acuteness of instinct, render them most efficient auxiliaries. We mention a few to illustrate their usefulness. The robin, blackbird and quail make many a hearty meal of the cut worms and their moths, each sometimes eating daily an amount exceeding its own weight. All the thrushes consume wire-worms. The catbird, the blue jay, the yellow-bill and black-bill cuckoo commit great slaughter among the tent caterpillars. The downy woodpecker by unerring instinct knows where to bore his hole to find and to feast upon the harmful borer. The oriole destroys hosts of curculios and pupæ of codling moths and tent caterpillars. The common cedar bird is a most voracious devourer of the canker worms; and the purple groker and the house pigeon prey upon them as long as they last. The European sparrow, imported into New York a few years ago, exterminated the repulsive drop worms which infested the trees of the parks and streets. They also make havoc of the dreaded canker worm. The chirping sparrow, the song sparrow, the purple finch, the white-eyed, red-eyed, yellow throated, solitary and warbling vireos, the king-bird, the summer yellow bird, Maryland yellow bird, blue bird and others are very efficient assistants in destroying noxious worms and insects.

Let us then encourage the feathered tribes to make their homes in our gardens, orchards and fields that they may aid us in the beneficent work; and if some of them occasionally take a dessert of fruit to give a relish to their caterpillar steak, and thus repay themselves for long months of patient labor, let us cheerfully allow them a moiety of our strawberries and cherries. Our farmers are too apt to accuse them of pilfering fruit, and to owe them a grudge. To such the following lines of Longfellow convey peculiar significance:

“You call them thieves and pillagers, but know,
They are the winged wardens of your farms,
Who from the cornfields drive the insidious foe,
And from your harvests keep a thousand harms,
Crushing the beetle in his coat of mail
And crying havoc on the slug or snail.”

CATALOGUE OF FRUITS OF THE STATE OF MAINE.

Plan of the Catalogue.

The names of varieties are given according to the nomenclature adopted by the Society, which is substantially that of "Downing's Fruits and Fruit Trees of America." A few leading synonyms are given, and these are placed in italics immediately under the name adopted by the Society.

The State is divided into three divisions, designated as the Northern, Central and Southern Divisions.*

The northern division embraces northern Oxford, Franklin, Somerset, Piscataquis, Penobscot and Aroostook counties.

The central division embraces the remainder of Oxford, and Androscoggin, Kennebec, Waldo, Hancock, and Washington counties.

The southern division embraces Cumberland, Sagadahoc, Lincoln, Knox and York counties.

The explanation of the abbreviations and signs used in the several tabular columns is prefixed to the list of varieties in each of the respective classes of fruits.

Cultivators are requested to note carefully any errors which may be found in the catalogue, or any well founded opinions derived from their observation and experience differing from the conclusions therein indicated, in order to report the same at future meetings of the Society, with the view to make the catalogue as nearly perfect as possible.

* In the present edition this classification has only been applied to the list of apples.

I — APPLES.

EXPLANATION OF ABBREVIATIONS AND SIGNS.

In the column of "Size" l. stands for large; m. for medium, and s. for small. In the column of "Quality" b. signifies best; v. g. very good; g. good, and p. poor. In the column of "Use" C. stands for cooking; F. family use—cooking, baking, &c.; D. dessert, and M. market. In the column of "Season" S. signifies summer; E. A. early autumn; A. autumn; L. A. late autumn; E. W. early winter; W. winter, and Sp. spring. In the columns devoted to the several divisions, h. r. signifies highly recommended; r. recommended; † not recommended; ? introduced but not fully and extensively tested; blank, nothing reliable known of the variety in the division under which such blank is found.

It should be borne in mind that any recommendation is for the special use designated in the column of "Use."

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
1	Alexander.....	l.	p.	C.	A.	h. r.
2	American Summer Pearmain.....	m.	b.	D.	E. A.	-
3	American Golden Russet <i>Golden Russet.</i>	s.	b.	D.	E. A.	-
4	American Golden Pippin.....	m.	v. g.	-	W.	-
5	Baldwin	m.	g.	M.	W.	†
6	Beauty of Kent.....	l.	g.	M.	W.	-
7	Benoni	m.	v. g.	D.	E. A.	r.
8	Black Oxford	s.	g.	-	L. W.	r.
9	Black Gilliflower.....	m.	g.	-	W.	†
10	Blue Pearmain.....	l.	v. g.	M.	E. W.	-
11	Brigg's Auburn.....	l.	v. g.	D.	A.	-
12	Canada Reinette.....	l.	v. g.	M.	W.	h. r.
13	Cole's Quince	l.	b.	D.	S.	h. r.
14	Congress	l.	g.	M.	A.	-
15	Danvers Winter Sweet.....	m.	g.	F.	L. W.	-
16	Dean	s.	b.	D.	A.	h. r.
	<i>Nine Ounce.</i>					
17	Duchess of Oldenburg.....	l.	g.	C.	A.	h. r.
	<i>New Brunswicker</i>	-	-	-	-	-
18	Early Harvest.....	m.	v. g.	D. C.	S.	-
19	Early Strawberry.....	s.	v. g.	D.	S.	-
20	Early Pennock.....	m.	b.	D.	A.	-
21	English Sweet	m.	v. g.	M.	E. W.	r.
	<i>Ramsdell's Red Sweet.</i>					
22	Esopus Spitzenburg.....	m.	v. g.	M.	W.	†
23	English Russet.....	m.	g.	M.	W.	r.
24	English Russet.....	s.	v. g.	M.	Sp.	-
	<i>Poughkeepsie Russet.</i>					
25	Fameuse.....	s.	v. g.	D.	E. W.	h. r.
26	Fall Harvey.....	l.	g.	M.	L. A.	r.
	<i>Harvey.</i>					
27	Fall Pippin.....	l.	v. g.	M.	E. W.	r.

OF APPLES.

Number.	Central Division.	Southern Division.	REMARKS.
1	†	†	Hardy, productive, and showy. Succeeds well in high latitudes.
2	-	-	Not extensively grown. Limited trial proves well. In Kennebec reported a good bearer.
3	r.	r.	Excellent dessert apple. Prolific. Several varieties are erroneously grown under this name.
4	-	?	An old variety. Never extensively tried in this State.
5	h. r.	h. r.	Tender, should be planted on high land.
6	?	?	.
7	r.	r.	Highly recommended by many.
8	†	†	Hardy and productive—inclined to overbear. Not good for cooking, hence not popular in market.
9	†	†	An old variety—not popular.
10	r.	r.	Reported by some to succeed well in Northern Division.
11	r.	-	A native of Androscoggin county. Popular wherever tried.
12	-	-	Hardy. Succeeds well where tried in Aroostook county.
13	r.	r.	
14	r.		
15	†	†	A late keeping sweet apple—not very popular. Has been generally superseded by other varieties.
16	r.	?	A popular apple wherever known. Productive.
17	r.	†	Hardy in Northern Division. For extreme north cannot be too highly commended.
-	-	-	Claimed by some to be a distinct variety—a seedling of Duchess of Oldenburg.
18	r.	r.	Under good cultivation one of the most desirable early apples. Quite tart unless fully ripe.
19	r.	r.	
20	h. r.	-	One of the most popular in market where known, as a dessert apple. Good bearer.
21	?	-	Popular in some sections. Not extensively tested in Maine.—Recommended by those who have tried it.
22	†	†	An excellent fruit, but not productive enough to be recommended. Extensively tried, yet not popular when profit is the test.
23	r.	r.	This is not the English Russet of the books. Good grower—productive. Quality hardly “good.”
24	r.	r.	A valuable late keeper. Not so large as Roxbury Russet, but succeeds on soils where that fails.
25	r.	r.	Very hardy.
26	r.	r.	Supposed to be identical with Harvey. A fine fruit. Succeeds well in Northern Oxford and in Franklin.
27	-	-	

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
28	Fall Jenneting.....	l.	v. g.	M.	A.	-
29	Foundling.....	m.	v. g.	D.	A.	-
30	Franklin Sweet.....	l.	b.	F.	A.	-
31	Garden Royal.....	s.	b.	D.	A.	-
32	Gloria Mundi.....	l.	v. g.	D. M.	A.	-
33	Golden Ball.....	m.	g.	M.	A.	†
34	Grand Sachem.....	l.	p.	-	-	-
35	Gravenstein.....	m.	v. g.	C. M.	A.	h. r.
36	Granite Beauty.....	l.	v. g.	M.	W.	-
37	Hightop Sweet.....	s.	v. g.	F.	A.	r.
38	Hoyt Sweet.....	m.	b.	F.	W.	-
39	Hubbardston Nonsuch.....	m.	b.	F. M.	E. W.	h. r.
40	Hurlbat.....	m.	v. g.	M.	W.	-
41	Jewett's Fine Red..... <i>Nodhead.</i>	s.	b.	D.	L. A.	r.
42	Jefferis.....	m.	v. g.	D.	A.	-
43	Jonathan.....	m.	v. g.	D.	W.	-
44	Kilham Hill.....	m.	g.	M.	W.	-
45	King of Tompkins County.....	l.	b.	M.	W.	?
46	King Sweeting.....	s.	b.	F.	S.	h. r.
47	Large Yellow Bough..... <i>Sweet Bough.</i>	l.	g.	M.	S.	-
48	Loudon Pippin.....	l.	g.	M.	W.	?
49	Maiden's Blush.....	m.	g.	M.	A.	-
50	Minister.....	m.	v. g.	D. M.	W.	-
51	Milding.....	l.	v. g.	M.	W.	-
52	Moses Wood.....	m.	v. g.	C. D.	S.	-
53	Mother.....	m.	b.	D.	E. W.	-
54	Mountain Sweet.....	m.	g.	M.	W.	-
55	Naked-limbed Greening.....	m.	g.	M.	W.	h. r.
56	Northern Spy.....	l.	b.	M. D.	W.	r.
57	Orange Sweet.....	m.	v. g.	M.	A.	r.

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
28	?	—	Quite extensively introduced with early importations of New York nursery stock.
29	?	?	
30	r.	r.	An excellent sweet apple for family use.
31	r.	r.	Can hardly be recommended for general cultivation. Too small for market.
32	h. r.	—	Not that of the books. Extensively grown in the central part of the State, and wherever grown is a popular apple.
33	†	†	An apple quite extensively disseminated, but not popular—can hardly be recommended.
34	†	†	A showy apple, but quality not good enough to be propagated.
35	h. r.	h. r.	Reported a shy bearer in Piscataquis.
36	?	?	Not extensively introduced. Highly commended when tried.
37	h. r.	h. r.	
38	?	?	An excellent winter sweet apple.
39	h. r.	h. r.	
40	r.	r.	
41	r.	r.	Under high cultivation profitable—otherwise fruit imperfect.
42	—	?	Not extensively grown in this State.
43	—	?	Excellent dessert apple. Not much grown in this State.
44	†	†	Not generally popular.
45	?	?	Is not fully proved. With many does not prove desirable.
46	h. r.	h. r.	Origin, Sidney, Maine Valuable for family use. Too small for market.
47	r.	r.	Valuable chiefly because so early. When fully ripe quality "very good."
48	—	—	
49	†	—	A very handsome apple.
50	r.	r.	An early, great, and continuous bearer.
51	?	—	A new variety from New Hampshire. Promises well.
52	r.	r.	
53	r.	r.	A choice dessert apple. Tree considered a little tender, though Cole calls it perfectly hardy.
54	r.	—	A new variety. Origin, Greene, Me. Promising.
55	h. r.	—	Grown extensively in Waldo county. Wherever grown considered profitable.
56	h. r.	h. r.	Slow to come into bearing, but when it does, under high cultivation, proves desirable.
57	r.	—	Highly recommended by many.

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
58	Peck's Pleasant.....	m.	v. g.	M.	W.	-
59	Porter	m.	v. g.	M.	A.	r.
60	President.....	l.	g.	M.	A.	-
61	Primate.....	m.	b.	D.	S.	-
62	Pumpkin Sweet.....	l.	b.	F.	L. A.	r.
63	Rambo.....	m.	v. g.	M.	W.	-
64	Red Astrachan.....	m.	v. g.	F. M.	S.	h. r.
65	Red Canada	m.	v. g.	-	W.	†
	<i>Old Nonsuch.</i>					
66	Ribston Pippin.....	m.	v. g.	D. M.	W.	-
67	Rhode Island Greening	l.	b.	M.	W.	†
68	Roxbury Russet.....	m.	g.	M.	Sp.	†
69	Sarah	l.	g.	C.	A.	r.
70	Sops of Wine.....	m.	g.	M.	S.	r.
	<i>Bell's Early.</i>					
71	Somerset.....	l.	b.	D. M.	A.	h. r.
72	Starkey.....	m.	b.	D. M.	L. A.	-
73	Superb Sweet	m.	b.	D. M.	A.	-
74	Sweet Russet.....	l.	v. g.	F. M.	E. W.	-
75	Sweet and Sour.....	l.	v. g.	F.	W.	-
76	Swaar.....	l.	v. g.	M.	W.	?
77	Summer Sweet Paradise.....	l.	v. g.	F. M.	E. A.	-
78	Talman's Sweet.....	m.	v. g.	F. M.	W.	h. r.
79	Tetofsky	s.	b.	D.	S.	h. r.
80	Thompson.....	m.	v. g.	M.	E. A.	†
81	Twenty Ounce	l.	p.	C.	L. A.	†
	<i>Cayuga Red Streak.</i>					

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
58	?	?	
59	h. r.	h. r.	
60	r.	r.	
61	r.	r.	
62	h. r.	h. r.	Good for baking,--very sweet. Also good market apple. Succeeds well in portions of Northern Division.
63	?	?	Popular in the West. Not fully proved here.
64	h. r.	h. r.	Popular everywhere. Quite tart unless fully ripe.
65	†	†	Not so profitable as many other later varieties.
66	†	†	Not universally profitable. Some localities proves a good bearer.
67	h. r.	h. r.	
68	r.	r.	Cannot be generally recommended for any locality. On soils adapted to it, proves one of the most profitable. On other soils it is a very poor bearer.
69	-	-	Native of Wilton. Great bearer.
70	r.	r.	Extensively grown under the synonym. Hardy, productive and profitable.
71	h. r.	h. r.	Native of Mercer. Showy. Fruit every way valuable. Said by some to drop badly.
72	h. r.	-	Native of Vassalboro'. Quality among the best. Extensively planted in its native town, where it is called one of the most profitable.
73.	r.	-	An excellent apple, though not extensively grown.
74	?	?	There are many kinds grown under this name, with nothing to recommend them but their late keeping, quality and their exceeding sweetness. This variety is large and has much to recommend it for an early winter sweet apple, Good for baking.
75	-	-	This variety grows with sections of sweet alternating with sour. Choice for dessert. Grown chiefly as a curiosity.
76	?	-	
77	?	-	An old variety. A desirable early sweet apple. Not widely grown.
78	h. r.	h. r.	More extensively grown than any other winter sweet apple. Tree hardy, prolific.
79	r.	r.	Tree hardy everywhere.
80	†	†	A good fruit. Tree not a free grower nor abundant bearer, and for these reasons cannot be recommended.
81	†	†	Large, oarse, acid, not rich.

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division
82	Wagener.....	l.	g.	M.	W.	-
83	Williams' Favorite.....	l.	g.	M.	S.	r.
84	Winthrop Greening.....	l.	b.	F. M.	A.	-
85	Winter White	l.	v. g.	M.	W.	†
86	Yellow Bellflower.....	m.	b.	D. M.	W.	-
87	Yellow Newtown Pippin.....	m.	b.	D.	W.	-

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
82	?	?	
83	h. r.	h. r.	Succeeds well in portions of Northern Division.
84	r.	r.	One of our best native varieties. Desirable in many respects.
85	†	†	An old variety introduced by Mr. Vaughn. Grown to some extent in Kennebec, where some speak highly of it. It is not recommended over some later varieties.
86	r.	r.	Hardy, giving good satisfaction in many localities. On favorable soils an abundant bearer, when it is crisp, juicy and rich.
87	?	?	When not well grown, quality as inferior as its size. Not extensively grown. In some instances proving well.

DESCRIPTION OF APPLES NAMED IN THE CATALOGUE.

Summer Apples.

EARLY HARVEST. An American apple. Fruit medium to small. Form roundish, a little flattened; the skin bright yellow in the sun, pale in the shade, and smooth; flesh white, tender, juicy, and crisp, with a rich, sprightly, acid flavor. Season, end of July and August.

It is not called a very vigorous grower in this State, and requires high cultivation, as without it the fruit is inferior and often imperfect—sometimes badly scabbed and cracked. It is one of the best early apples we have, excellent for cooking and good for dessert, and popular with the whole family and in the market. Downing well says, the smallest collection should not be without it. We have seen it when under high cultivation, with fruit full medium size, perfect, and in all respects desirable. Goodale says: "One wants a tree or two for home use, but it is not profitable for market." This hardly does it justice, for under high cultivation, such as we should give all fruit, it proves quite profitable as a market apple. Coming into market before other apples are ripe, it always commands a high price. It should have a place in the amateur, family, and market lists.

RED ASTRACHAN. Fruit medium, very smooth and fair, roundish, slightly flattened; color rich, deep crimson all over—a little paler in the shade—and covered with a rich bloom like the Blue Pearmain. Flesh white, sometimes in highly colored specimens stained with pink next the skin, fine, crisp, tender, juicy, sprightly acid. When fully ripened exceedingly rich and pleasant; before ripe a little tart; past ripe, or if left too long on the tree, it becomes mealy and insipid. August, or a little later than the Early Harvest.

Of Swedish origin, first imported into England in 1816, and in America bears more abundantly than in its native clime. It is an apple of great beauty, and as remarkable for its hardiness as its beauty, and as popular as it is hardy and beautiful. It may be doubted whether there is another single variety highly recommended over so wide an extent of country, East and West, as is this. The tree is one of our freest growers, and at the same time perfectly hardy throughout all the Northern States where apples

are grown. It is a good cooking apple, though not of the *highest* quality for dessert; from its attractive appearance and *very good* quality, it is exceedingly popular in market. It can be highly recommended throughout the State. Tree an early and abundant bearer.

LARGE YELLOW BOUGH. Commonly known as Sweet Bough. Size large when fully grown, oblong ovate. Skin pale yellow, sometimes a slight blush in the sun. Flesh white, tender, juicy, sweet, and rich, if full grown and ripe. Owing to the habit of premature falling from the tree, and also to the fact that it is one of the earliest sweet apples we have, it seldom remains upon the tree till fully ripe; and unless it does the flavor is not up to a high standard. Good for baking. Tree of moderate vigor and productiveness. August.

SOPS OF WINE. The apple extensively grown in many sections of the State under the name of *Bell's Early*, is believed to be identical with the *Sops of Wine* of Downing. Of medium size, roundish ovate. Skin red, with dull, deep red in the sun. Flesh white, sometimes stained next the skin, not very juicy; mild, pleasant sub-acid. Tree hardy, a rapid grower and good bearer. Last of August to middle of September.

This apple is grown to a considerable extent, and everywhere gives good satisfaction. Its flesh is not quite crisp enough, nor its flavor sufficiently sprightly to class it of the highest quality, yet from its high color it is popular in market; and as a dessert fruit suits the taste of those who admire sub-acid fruit. An old European variety.

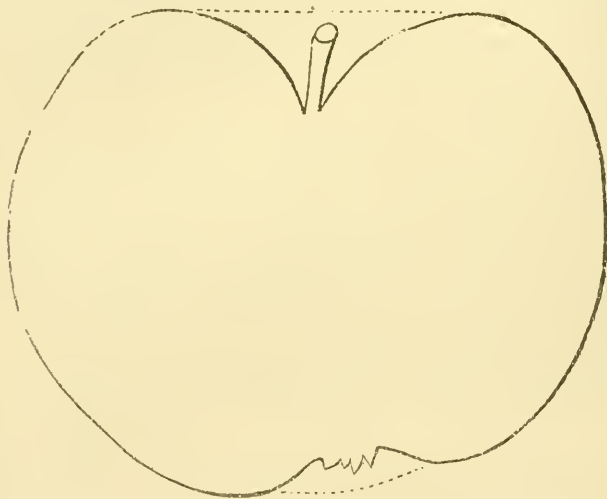
WILLIAMS' FAVORITE. A large, handsome, and very popular market apple, of fair quality, ripening through August and September. Always commands a high price when well grown. Oblong, smooth, red, covered mostly with darker red or deep crimson. Flesh white, sometimes a little stained with red; of mild and agreeable flavor. The tree is very hardy and productive. Needs a strong rich soil. It is a moderate and ill-shaped grower in the nursery, but forms a large tree in the orchard, with a wide spreading top. Fruit somewhat larger than the *Sops of Wine*, and ripening about the same time. Origin—Roxbury, Mass.

TETOFISKY. Fruit medium to small, oblate conic, sometimes nearly round, smooth, with a yellow ground handsomely striped with red and covered with a whitish bloom, under which is a shining skin.

Flesh white, juicy, sprightly acid, fragrant, agreeable. August, or about with the Red Astrachan.

This is one of those Russian iron-clads, which prove perfectly hardy in high northern latitudes. It may be especially recommended for introduction in the northerly part of the State. It comes early into bearing, bears profusely, and with good cultivation will bear every year.

COLE'S QUINCE. Cole, in the American Fruit Book, gives the following description of this apple: "Large to very large; flattish-conical; ribbed, bright yellow, seldom a brown cheek; flesh when



COLE'S QUINCE.

first ripe firm, juicy, pleasant acid, and first-rate for cooking. When very mellow, remarkably tender, of a mild, rich, high quince flavor and aroma." Last of August and first of September. Origin, Cornish, Maine.

This variety has never been very widely disseminated in this State, yet where grown is popular for its high quality, and for its hardiness. Very fine specimens are grown on the farm of Maj. Loren Adams, in the town of Wilton, Franklin county.

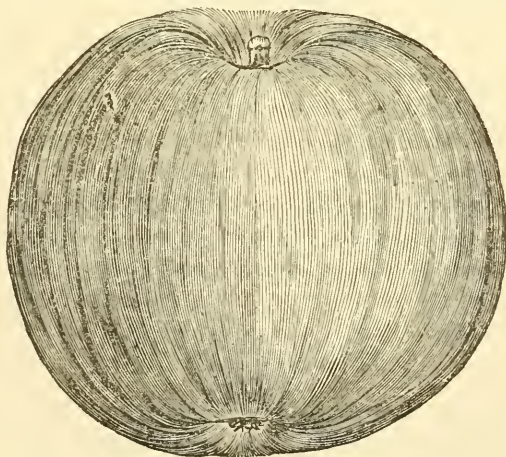
PRIMATE. Fruit medium, roundish, oblate, conic, greenish white, with a crimson blush on the exposed side. Flesh white, very tender, sprightly, refreshing, mild sub-acid. Its tender flesh and sprightly flavor render it an excellent dessert fruit. Tree is hardy throughout the State, and is a strong and stocky grower and a good bearer. Season, the last of August and continuing well into

September. This is not very extensively grown in the State, but may well receive more attention.

The origin of this is not known. It has been long grown in different States, known by different names. From all the information that it has been possible to obtain in relation to its origin and introduction, it seems that a Mr. Lyman H. Tubbs, then of Benton, New York, obtained scions of this fruit from a Mr. Bush, in New Jersey. From the scions thus obtained, the variety was disseminated around Benton, Geneva, and adjoining towns, and thence to other States. Whether the tree from which Mr. Tubbs obtained his scions was a seedling is not known.

EARLY STRAWBERRY. Fruit rather small, roundish, narrowing towards the eye. Skin smooth and fair, finely striped and stained with bright and dark red on a yellowish ground. Flesh white, slightly tinged with red next the skin; tender, sub-acid, and very sprightly and brisk in flavor, with an agreeable aroma. Season, the last of August to first of September. Originated in the neighborhood of New York. Fruit is rather small for market, but is a most excellent dessert fruit. Goodale says it is too tender for Maine; yet it is well recommended by others who are fruiting it in the central and southern sections of the State. It cannot be recommended for the extreme northerly section.

BENONI. Fruit medium to small. Form roundish oblate conical; color pale yellow, shaded, striped, and marbled with dark crimson,



BENONI.

and thinly sprinkled with bright dots. Flesh yellow, juicy, ten-

der, pleasant, sub-acid. Core small. Season last of August, and well into September. In the catalogue this is marked early autumn, though here it is classed among the summer apples. It is one of those varieties which is not fully ripe till September, though beginning to ripen in August. Valuable for market or dessert. It comes well recommended by those who are growing it in each of the three divisions of the State. It is not known, however, whether it has been tested in northern Penobscot or in Aroostook. We may have more profitable apples for market at this particular season, yet for the sake of variety this is worthy of a place.

KING SWEETING. Fruit rather small, regular, conical; skin yellow; flesh yellowish, crisp, tender, juicy, and exceedingly sweet. Tree hardy, and an abundant bearer. Origin, Sidney, Me. This variety has been disseminated throughout the State, and is extensively grown in its native town. It is too small to sell for a high price in market, yet such is the popularity of the fruit for baking and for dessert, that they are in good demand. It is emphatically a family apple, and no collection would be complete without this or the Hightop Sweet, to which it is closely allied in quality and use. Season, the last of August and September.

This apple is grown under the names of Summer Sweeting, Sidney Sweet, King of Sweets, and Hightop Sweet. At the last meeting of the Pomological Society it was decided to adopt the name given above.

MOSES WOOD. Fruit medium, roundish oblate, yellow ground beautifully striped with bright red. Flesh white, soft, crisp, very juicy, of a pleasant sprightly acid flavor. Excellent for cooking, and a good dessert apple. Tree vigorous and productive. Fruit even and perfect. Season, last of August to middle of September. Origin, the farm of Moses Wood, Winthrop, Me. This apple has been pretty well distributed through the central part of the State, and is reported to succeed well wherever tried.

Autumn Apples.

AMERICAN SUMMER PEARMAIN. Fruit medium to small, rather oblong, skin smooth, yellow, mostly covered with red; flesh remarkably tender, juicy, and very rich. One of the best for dessert. The flesh is so tender and crisp that it often breaks open in falling

from the tree. Tree not remarkable for hardiness. Season, the last of September and first of October.

This apple has not been extensively grown in this State, though where tried it has proved well. It would be valuable in an amateur collection. Fruit too tender for transportation.

HIGHTOP SWEET. Fruit medium to small, roundish, regular; skin smooth; color light yellow, with seldom pale blush in the sun. Flesh yellow, not very juicy, pleasant, rich and very sweet. Better for family use than for dessert. An old variety, which originated in Plymouth, Mass., and highly prized wherever known. It is not large enough or showy enough to sell for a high price in market, yet its popularity for family use always creates a demand. Season through September, or a little later than the King Sweeting. It ripens some of its fruit early in September, and so continues through the month. Fruit keeps well after taken from the tree. Tree vigorous, hardy, and long-lived. Trees are now in bearing which have borne fruit for three quarters of a century.

THOMPSON. Fruit medium, oblate; skin smooth, striped with red; flavor a rich sub-acid. Season, September, or a trifle later than the Williams' Favorite. Origin, the farm of John Thompson in the town of Mercer, Somerset county, and from whom the apple takes its name. The Williams' Favorite has frequently been mis-called the "Thompson Apple," from the fact, without doubt, that Mr. Thompson was the first to introduce it to notice in the localities where it is thus known. The Thompson has not sufficient merit to warrant its recommendation over many others ripening at about the same season, and its name in the list and this description are inserted chiefly that the apple where grown may not be confounded with any other. Tree is not a great grower, nor abundant bearer.

SUMMER SWEET PARADISE. Fruit large, round and regular in its form, a little flattened at both ends. Skin thick, pale green, sometimes faintly tinged with yellow in the sun, and very distinctly marked with numerous large dark grey dots. Flesh tender, crisp, very juicy, sweet, rich, aromatic. Season, September. Origin, Pennsylvania. Cole pronounces it a great grower and abundant bearer, and designates it as one of the finest. Although an old variety, this has never been extensively disseminated in this State. F. M. Woodard, a distinguished fruit grower of Kennebec county has grown it for several years and esteems it highly.

BRIGGS' AUBURN. Fruit large, flat; light yellow, slight blush in the sun; flesh white, fine texture, flavor a blending of the saccharine with the sub-acid. Season, last of September and first of October. Origin, Auburn, Maine. Good for family use and for market. Is not very extensively grown.

GLORIA MUNDI. Fruit large, flat; bright yellow, blush in the sun; flesh yellow, fine texture, crisp, very juicy, flavor much like the Briggs' Auburn, save that it is more sprightly. Season, last of September and first of October. Good grower and great bearer. One of the best for family and dessert use, and popular in Lewiston market, where it is best known. Extensively grown in Androscoggin county, where it gives universal satisfaction. Fruit even and remarkably free from defects. Every way desirable. This is not the Gloria Mundi of the books.

DUCHESS OF OLDENBURG. The following description of this fruit and its habits is copied from Mr. Goodale, in Report of 1863:

"A Russian fruit of good size, fair quality, great beauty, extremely hardy and immensely productive. Fruit rather large, roundish. Skin pale yellow, finely streaked, and washed with bright red, with a faint bloom over it. Flesh crisp, tender, juicy, with a brisk acid flavor, of tolerable quality for the dessert and excellent for all other uses. September.

"In southern Maine, the Duchess is apt to fall off before ripening, but in this, and in other respects, also, it improves as we go north. It is better in Kennebec county than in York, and better in Aroostook than in Kennebec. Its value in the extreme north may be judged of by the experience of Mr. Sharp, of Woodstock, New Brunswick, twelve miles from Houlton, Maine, who informed me that out of four hundred varieties of grafted apples proved by him rather less than a dozen succeeded, and of these the Duchess stood decidedly at the head of the list. In that vicinity it is known under the name of "The New Brunswicker." The only fault I heard ascribed to it there, was by one who objected to the necessity of building a scaffold about his trees every year—an objection not ill grounded, for unlike other apples, an excessive crop does not prevent this sort from bearing heavily the next year. Such excessive production, however, tells upon the growth of the tree. Where all the strength is given to fruit bearing, we cannot expect much growth of wood, and I do not recollect ever to have seen in Maine or New Brunswick a tree of this variety of large size, unless

grafted into a tree already well grown. Had we other varieties combining choice quality and late keeping with the hardiness and half the productiveness of this, our northern counties would have little left to ask for in regard to apple culture."

The above description and high recommendation, although in the main perhaps correct, cannot all be endorsed. In the extreme north it cannot be too highly recommended. In Penobscot county it is popular; in Franklin it is but little grown—they can grow better fruit. It can hardly be called a "tolerable dessert apple" when put in comparison with some of the best autumn apples grown in central and southern Maine. The flavor is a harsh, rasping acid, and not rich. It is showy, and is a fair cooking apple provided a plenty of sugar is used to give it richness.

DEAN. Fruit medium, shoulder sharp, tapering towards the eye; one side larger than the other; skin smooth, greenish yellow, mostly splashed and striped with red. Flesh extremely tender, juicy, lively yet mild sub-acid flavor. One of the best for dessert, and for this reason, like the Jewett's Fine Red it always is in demand in the markets where known. Originated with Cyrus Dean of Temple, in Franklin county. It is extremely popular in that county, and is proving well in other sections of the State. We have seen some fine samples grown at Orono in Penobscot county, and also at Bath in Sagadahoc county, which goes to prove that it can accommodate itself to a wide latitude. It certainly is a valuable acquisition to our list of native apples. Season, last of September and October. In the northern part of the State it is frequently kept well into the winter. At the last winter meeting of this Society there was a sample on exhibition grown in the town of Dexter.

SOMERSET. Fruit large, roundish, somewhat flattened, bright yellow, mostly covered with splashes and stripes of bright red. Flesh yellowish, tender, juicy agreeable sub-acid. Season, last of September and first of October. Showy, resembling in appearance the Gravenstein; also a good dessert apple. Said by some to drop badly from the tree before fully ripe, otherwise in all respects desirable. This variety originated on the farm of George Thompson, in the town of Mercer, Somerset county. Mr. Thompson came to that town from Massachusetts some seventy years ago, bringing a lot of seedling apple trees with him, which were set on his farm. One of those trees bore the apple under description,

and another the Thompson before described. As soon as the quality of the apple became known it was disseminated through the adjoining towns, and since all through the State. A dish of these apples has twice taken a premium at the State Fair as "the best plate of autumn apples." It combines high quality with fine appearance.

FRANKLIN SWEET. Fruit large, somewhat oblate, tapering towards the calyx; skin oily when fully ripe, yellow ground nearly covered with splashes of red; stem short and thick; leaves large; terminal twigs stout. Flesh yellow, juicy, crisp, very sweet and rich. Grows mealy when over ripe. Excellent for baking and for dessert. One of the best sweet apples we have. Grown extensively in the central part of the State. Drops from the tree somewhat before fully ripe. Season last of September and first of October.

EARLY PENNOCK. Fruit medium to large, conical; base smooth, apex slightly ribbed; light yellow, splashed and striped with light red. Flesh yellow, exceedingly juicy and soft, with a lively sub-acid flavor. Core large, seeds loose. Begins to ripen the middle of September and continues a month. Holds to the tree till ripe. Twigs slender, drooping. One of the best dessert apples grown. Tree a good grower and great bearer. Every way desirable. Grown quite extensively in Androscoggin county, where it has been brought to notice by Z. A. Gilbert. May be highly recommended for its season.

FALL JENETING. Fruit large, oblate, conic, strongly ribbed, pale greenish yellow with a blush. Flesh tender, juicy, brisk sub-acid. Only good. Tree vigorous and productive. Season first of October. Introduced with early importations of New York trees.

PORTER. So well known that it needs no description. Succeeds well throughout the State, with the exception of the extreme north.

FOUNDLING. Originated in Groton, Mass. The tree is of a spreading habit, hardy, a good grower and regular bearer. Fruit large, ribbed. Skin greenish yellow, striped and shaded with deep red. Flesh yellow, tender, and juicy, with a rich aromatic flavor. One of the best of its season, which is last of September to October. Has been grown in the State for twenty years or more, but is not so well known or widely cultivated as it deserves to be.

ORANGE SWEET. Fruit medium to large, roundish oblong, slightly ribbed towards calyx. Skin bright yellow. Flesh, yel-

lowish, tender, juicy, sweet, rich. Tree healthy, good bearer. Last of September and first of October. Hardy well north. Reported good in Piscataquis county.

SUPERB SWEET. Fruit medium to large, roundish oblong, pale yellow, much red, bright in the sun. Flesh white, very tender, juicy, of a sweet, rich, high flavor. Cole says it is one of the best. Season, last of September and first of October. Origin, Mansfield, Mass.

This variety is grown extensively in the orchard set by the late John Swett of Turner, now owned by Albion Ricker, Esq., where it is deservedly popular. Hardy and prolific; valuable for dessert and for market.

PRESIDENT. A very large, handsome apple—yellow, with a blush cheek. Flesh firm, juicy, sub-acid, and excellent for cooking, fair for dessert when fully ripe. Tree thrifty, hardy and productive. October.

CONGRESS. An apple very similar to the President in form, color, quality and season. Where one is grown the other is not needed.

JEFFERIS. Size medium, flattened form. Skin yellow, splashed and striped with crimson. Flesh white, very tender, crisp, juicy, with a rich, sub-acid flavor. A fair, handsome apple, ripening in September and October, which originated in Pennsylvania, and has proved of first rate excellence here. The tree is hardy. Young shoots slender, growth moderate; productive—one of the best of its season. Not a good grower in the nursery, hence never found for sale in nursery stock.

GOLDEN BALL. A large rich yellow apple of no great merit. Quite extensively disseminated, yet does not prove popular. Is not recommended.

MAIDEN'S BLUSH. A medium sized, but very beautiful apple, with nothing but its beauty to recommend it. In some sections of the country it is a profitable market sort. It has not been extensively disseminated in this State, and cannot be recommended for further trial.

WINTHROP GREENING—*Lincoln Pippin* (of some, *erroneously*). A native of Winthrop, and one of the most popular apples in Kennebec county. Fruit large, roundish, flattened; golden yellow, partially russeted, and with a red cheek in the sun. Flesh tender, crisp, juicy, with a rich, sprightly flavor. Good from September to

November, and I have seen them in perfect condition in January. In Kennebec county it is often heavily loaded with perfect fruit. Not an early bearer, but a vigorous grower, and becomes a tree of the largest size. An excellent dessert apple, and one of the best known for cooking.

ALEXANDER. A very large, showy Russian apple. Tree vigorous and perfectly hardy, even to the extreme north; and remarkably productive. Fruit regularly formed, oblate, conical. Skin greenish yellow, streaked with red. Flesh yellowish white, coarse, juicy, with rather acid flavor. Only good for cooking. Season October, and a little later in the extreme north. Like all Russian apples the farther north it is grown the better the quality of fruit. It can be highly recommended for the extreme northerly section of the State where our varieties of a better quality do not succeed. Some as fine samples as were ever grown in the State were on exhibition at the meeting of the Board of Agriculture last October at Orono, grown by J. S. Bennoch of that town. The central and southern sections of the State can do better to grow varieties of a higher quality.

TWENTY OUNCE. A very large and showy apple, extensively grown in Cayuga, county, N. Y., but an old fruit from Connecticut. Flesh coarse and not very high flavored, but its large size and handsome appearance render it valuable in market. Fruit always fair. Season, October and later. It cannot be very highly recommended. Has been introduced with New York trees.

GARDEN ROYAL. Fruit small, roundish oblate, slightly conic. Color greenish yellow, shaded, striped and splashed with rich red, a little dull or grayish toward the stalk. Flesh yellow, very tender, juicy, rich, mild sub-acid, aromatic. Quality, best. Season, October. An excellent dessert apple. It is grown quite extensively for Portland market, where it always sells readily for a high price. In other sections of the State not much grown. Valuable for amateur collections. It is claimed by some to be profitable to grow for market, on account of the high price it bears. Moderate grower. Needs high cultivation.

GRAVENSTEIN. The following description of this valuable variety is copied from Mr. Goodale's Report, 1863:

"This apple is more cosmopolitan than any other within my knowledge. That local character which attaches to nearly all

varieties of the apple, and by which their desirableness, whether in regard to hardihood, or thrift, or quality, or production, is confined within moderate limits, sometimes to very narrow ones, seems to attach in a very slight degree, if at all, to the Gravenstein. Like the Green Gage among plums, it seems to be at home, and to give general satisfaction wherever it is cultivated. It is a native of Germany, and is considered the best of northern Europe, and I know of no section of this country where it does not take a high rank, and by many is esteemed the very best autumn apple. Fruit large, rather flattened and a little angular. Skin yellow, streaked and dashed with bright red and orange. Flesh tender, crisp, very juicy and high flavored. September and October. The tree is of thrifty and vigorous growth, and productive. In regard to hardiness, Mr. A. Cushman, of Golden Ridge, Aroostook county, showed it to me in his orchard as healthy and sound as any. He esteemed this and the Duchess of Oldenburg as the two best for autumn. The only drawback to its value which I am aware of is, that in some situations (perhaps owing to stagnant moisture in the soil or subsoil) it is liable to a malignant, cankerous disease which affects the wood, and soon destroys the tree."

The flavor is quite tart, but highly aromatic. If allowed to get fully ripe the acid is toned down to a lively flavor, acceptable to the taste of those who are fond of tart fruit. As a cooking apple, it is not surpassed by any other known variety; cooks well when green and small, but its highest perfection is not reached until fully ripe. Though juicy, it is full of a native richness, which is not dependent on the sugar used. Mr. Goodale gives the season as September and October, but in the central part of the State it does not ripen till October, and further north will keep till winter. Saleable in market.

STARKEY. This is a new candidate for public favor. The original tree came from seed sown in nursery on the farm now owned by J. W. Starkey of Vassalboro', Kennebec county. It was broken down in a gale in 1872, being at that time sixteen inches in diameter. Tree is hardy, a vigorous grower in the nursery, moderate after coming into bearing; bountiful bearer, (better in its native locality than either the Baldwin or Rhode Island Greening) bears every year, but most in even years. Fruit medium and above, oblate, conical, regular, smooth and fair; color yellow ground, striped and splashed with bright red and covered with

light gray dots; stalk slender, three-fourths of an inch long, cavity small and even; flesh white, firm, crisp, juicy, of a pleasant lively sub-acid flavor. In its prime in November, but with care will keep well into the winter. Quality very good—excellent for dessert, and popular in market where known, being of good color as well as of high quality. Its flavor is less tart than the Gravenstein, and more so than Jewett's Fine Red. It can be recommended for trial.

PUMPKIN SWEET. There are several varieties of large sweet apples grown in different sections, locally known by the name of Pumpkin Sweet, given them no doubt on account of their large size. The quality of many of these is very inferior. Downing describes an apple of this name, and also gives it the synonym of Lyman's Pumpkin Sweet, which latter name—correctly no doubt—is given to a large sweet apple grown to a limited extent in this State. The same authority also describes another Pumpkin Sweet which he says is grown in Massachusetts and Connecticut,—and he might have added Maine, also, for this is the apple widely known here. Fruit large, roundish oblate, rich yellow with blush in the sun, generally with considerable russet. Flesh yellowish white, compact, breaking, rich, sweet, sugary. Core very small. Indispensable in collections for home use, and valuable for market. Its exceeding richness when cooked and its small core render it unrivalled as a baking apple or for preserves. Season, October, sometimes keeping till winter.

SARAH. This is a large apple, which originated in the town of Wilton, remarkable as being enormously productive, the original tree still bearing, having produced seventy bushels in one year. The fruit is uniformly fair and perfect. Color greenish yellow, with dull stripes of pale red. Valuable only for cooking. The quality is similar to the Twenty Ounce, and if one wishes to grow apples of that quality, without doubt the Sarah would be preferable to the last named.

FALL HARVEY. This apple is generally known in this State by the name of Harvey; sometimes, Harvey Greening. Fruit large, round, regular, rich straw color, with sometimes a blush cheek in the sun. Flesh yellowish white, juicy, crisp, sprightly acid flavor. Core small. Tree spreading, twigs long, slender, drooping. A good dessert apple when fully ripe; excellent for cooking—second only for this purpose to the Gravenstein. Season, last of October and later.

This apple succeeds admirably on the hills of northern Oxford and Franklin counties, and is there one of their most popular varieties. Farther south it is not so popular, while in the southern division it is seldom found.

JEWETT'S FINE RED. In this State this apple is generally known by the name of *Nodhead*. It originated in Hollis, New Hampshire, and was first brought to notice by the late Samuel W. Cole, author of *Cole's American Fruit Book*.

Fruit small to medium, roundish oblate, slightly angular, greenish, striped and shaded with crimson, covered with a dull grayish bloom. Flesh yellow, very tender, juicy, with a peculiarly rich, mild, sprightly flavor. One of the best dessert apples, and always saleable in market for this purpose. There is no apple on our list more widely popular for dessert use. Season, November, and later when well cared for or when grown in northern part of the State.

This variety absolutely requires high cultivation or the fruit will be too small and inferior for use, or will be so knotty and imperfect as to be entirely unsaleable. It also, from its thin and delicate skin, or from some unknown cause, is very subject to insect depredations. Tree hardy and a good bearer. Experience is proving it to be a very desirable variety in the northern part of the State, many there claiming that the difficulties attending its cultivation which have been alluded to, are not encountered to any extent in that section.

The descriptions here given, comprise all the summer and autumn apples inserted in the catalogue. A descriptive list of winter and spring apples will be given in the next Annual Report.

III—PEARS.

The columns explain as follows: "Size"—s., small; m., medium; l., large. "Form"—p., pyriform; ob. p., obtuse pyriform; ob. o. p., oblong obtuse pyriform; r., roundish; r. ob., roundish obtuse. "Color"—y. g., yellowish green; y. g. r., yellowish green with red cheek; y. r., yellow russet; y., yellow. "Quality"—g., good; v. g., very good; b., best. "Use"—F., family; F. M., family and market; M, market; K., kitchen. "Season"—S., summer; A., autumn; E. A., early autumn; L. A., late autumn; W., winter. "Origin"—Am., American; B., Belgian; E., English; F., French. The letter q affixed to the name of a variety indicates that it is adapted to be grown on the quince stock. No. 1 to 10 are regarded as the "best ten varieties," and the whole list as the "best twenty varieties," for this State.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.
1	Doyenne d' Eto	s.	r. o. p.	y. g. r.	v. g.	F.
2	Clapp's Favorite, q.....	l.	ob. o. p.	y. g. r.	v. g.	F. M.
3	Belle Lucrative, q.....	m.	r. o. p.	y. g.	b.	F.
4	Goodale	l.	ob. o. p.	y. g.	v. g.	F. M.
5	Fulton	s.	r. ob.	y. r.	b.	F. M.
6	Louise Bonne de Jersey, q.....	l.	ob. p.	y. g.	v. g.	F. M.
7	Howell, q	l.	r. p.	y. g.	v. g.	F. M.
8	Urbaniste, q	m.	p.	y. g.	v. g.	F. M.
9	Beurre d' Anjou, q.....	l.	ob. p.	y. g. r.	b.	F. M.
10	Lawrence	m.	r. o. p.	y. g. r.	v. g.	F.
11	Rostiezer	s.	p.	y. g. r.	b.	F.
12	Dearborn's Seedling	s.	r. p.	y.	v. g.	F. M.
13	Bartlett.....	l.	ob. o. p.	y.	v. g.	F. M.
14	Sheldon	m.	r.	y. r.	v. g.	F. M.
15	Beurre Hardy, q.....	l.	ob. p.	y. g.	g.	F. M.
16	Parsonage, q	m.	ob. o. p.	y. r.	v. g.	F. M.
17	Duchess d' Angouleme, q.....	l.	ob. o. p.	y.	v. g.	F. M.
18	Beurre Clairgeau.....	l.	p.	y. r.	g.	M.
19	Winter Nelis	s.	ob. p.	y. r.	b.	F.
20	Vicar of Winkfield	l.	p.	y. g.	g.	K. M.

OF PEARS.

Number.	Season.	Origin.	REMARKS.
1	S.	B.	Like early pears generally, (and in fact like almost all others) this should be gathered before fully ripe, otherwise it is liable to lack quality and to decay at the core.
2	E. A.	Am.	Fruit showy and attractive. Tree a vigorous grower. Very popular.
3	E. A.	B.	The best single variety for home use.
4	A.	Am.	Very vigorous and productive; fruit having a short stem is liable to blow off.
5	A.	Am.	Should be grafted into vigorous trees.
6	A.	F.	Gives its best fruit only on the quince stock, with garden culture.
7	A.	Am.	
8	L. A.	B.	Of slow growth on quince, but when grown is one of the best in quality, and most permanent and productive.
9	L. A.	F.	In some localities bears lightly,—otherwise nearly faultless both in tree and fruit.
10	W.	Am.	Succeeds in more sandy soils than most pears.
11	E. A.	-	Tree vigorous, but irregular and straggly growth.
12	E. A.	Am.	Regular and abundant bearer.
13	E. A.	E.	In this State should be grown in well sheltered positions.
14	A.	Am.	
15	A.	-	Tree remarkably vigorous.
16	A.	Am.	Not yet grown by many; has gained steadily in favor where known.
17	L. A.	F.	Gives its best fruit on the quince stock, with garden culture.
18	L. A.	F.	Suitable only for light and warm soils.
19	W.	B.	Should be grafted into vigorous trees.
20	W.	F.	The best cooking pear. When of large size, by suitable thinning, and ripened yellow, is good for eating.

III—PLUMS.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—r., roundish; o., oval; r. o., roundish oval; o. ob., oval obovate. "Color"—p., purplish or very dark; r., reddish or copper color; y., yellow; g. y., greenish yellow; y. r., yellowish with shades or spots of red. "Quality"—g., good; v. g., very good; b., best. "Use"—F., family; M., market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bavay's Green Gage. <i>Reine Claude de Bavay.</i>	l.	r.	g. y.	b.	F.	L.
2	Bleeker's Gage.	m.	r. o.	y.	v. g.	F. M.	M.
3	Bradshaw.	l.	o. ob.	r. p.	g.	M.	M.
4	Coe's Golden Drop.	l.	o.	y. r.	v. g.	F. M.	L.
5	Coe's Late Red.	m.	r.	p.	v. g.	F. M.	L.
6	Columbia.	l.	r.	p.	g.	M.	M.
7	Damson.	s.	o.	p.	g.	M.	L.
8	Duane's Purple.	l.	o.	r. p.	g.	F. M.	E.
9	Green Gage.	s.	r.	g. y.	b.	F.	M.
10	Huling's Superb.	l.	r. o.	g. y.	g.	F. M.	M.
11	Imperial Gage.	l.	o.	g. y.	b.	F. M.	M.
12	Jefferson.	l.	o.	y. r.	b.	F. M.	M.
13	Lombard.	m.	r. o.	r. p.	g.	M.	M.
14	McLaughlin.	l.	r.	y. r.	b.	F. M.	M.
15	Purple Gage.	m.	r.	p.	v. g.	F. M.	M.
16	Smith's Orleans.	l.	o.	r. p.	v. g.	F. M.	M.
17	Washington.	l.	r. o.	g. y.	v. g.	F. M.	E.
18	Yellow Egg. <i>White Magnum Bonum.</i>	l.	o.	y.	g.	F. M.	M.

IV—CHERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—ob. h., obtuse heart shape; r. ob. h., roundish obtuse heart shape; r. h., roundish heart shape; r., roundish or round. "Color"—l. r., lively bright red; d. r., red, almost black; a. m., amber mottled with red; y. r., yellow ground shaded with red. "Class"—H., Hearts, or tender fleshed sweet cherries; B., Bigarreau, or firm fleshed; D., Dukes, having a character in tree and fruit midway between the Hearts and Morellos; M., Morellos, having acid fruit, and the trees of small, slender growth. "Use"—F., family, for dessert; F. M., family or market; K. M., cooking or market; M., market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Class.	Use.	Season.
1	Belle de Choisy.	m.	r.	a. m.	D.	F.	M.
2	Black Heart.	l.	r. h.	d. r.	H.	F. M.	M.
3	Black Tartarian.	l.	r. h.	d. r.	H.	F. M.	M.
4	Coe's Transparent.	m.	r.	a. m.	H.	F.	M.
5	Early Richmond.	s.	r.	l. r.	M.	K. M.	E.
6	Elton.	l.	r. h.	y. r.	B.	F. M.	M.
7	Late Duke.	l.	ob. h.	d. r.	D.	K. M.	L.
8	Louis Philippe.	l.	r.	d. r.	D.	K. M.	L.
9	May Duke.	l.	r. ob. h.	d. r.	D.	K. M.	E.
10	Morello.	l.	r. h.	d. r.	M.	K. M.	L.
11	Napoleon.	l.	r. ob. h.	y. r.	B.	F. M.	M.
12	Reine Hortense.	l.	r.	l. r.	D.	F. M.	L.

2 A fine, old variety.

8 An old, excellent sort.

V—NATIVE GRAPES.

ABBREVIATIONS: "Size"—with reference to the berry, l. large; m., medium; s., small. "Form"—with reference to bunch and berry, s. r., short bunch, round berry; l. r., large and round; m. r. o., medium bunch, roundish oval berry; m. r., medium bunch, round berry. "Color" (when fully ripe)—b., black, or nearly so; r., reddish; g., greenish white or yellowish. "Quality"—p., poor; g., good; v. g., very good; b., best. "Use"—T., table; M., market; W., wine.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Allen's Hybrid.....	l.	l. r.	g.	v. g.	T. M.	M.
2	Adirondac.....	m.	m. r.	b.	v. g.	T.	E.
3	Agawam.....	l.	s. r. o.	r.	v. g.	-	M.
	<i>Rogers' No. 15.</i>						
4	Clinton.....	s.	m. r.	b.	p.	T. W.	L.
5	Concord.....	l.	l. r.	b.	g.	T. M. W.	M.
6	Creveling.....	m.	m. r. o.	b.	v. g.	T.	E.
7	Delaware.....	s.	s. r.	r.	b.	T. M. W.	E.
8	Diana.....	m.	s. r. o.	r.	v. g.	T. M.	L.
9	Eumelan.....	m.	r.	b.	g.	T.	M.
10	Hartford Prolific.....	l.	m. r. o.	b.	g.	M.	E.
11	Iona.....	m.	m. r. o.	r.	b.	T. M. W.	L.
12	Isabella.....	l.	m. r. o.	b.	g.	T. M.	L.
13	Israella.....	m.	s. r. o.	b.	p.	T.	M.
14	Lindley.....	m.	m. r. o.	r.	v. g.	T.	M.
	<i>Rogers' No. 9.</i>						
15	Merrimack.....	l.	s. r.	b.	v. g.	M.	M.
	<i>Rogers' No. 19.</i>						
16	Miles.....	s.	m. r.	b.	g.	T.	E.
17	Rebecca.....	m.	s. r.	g.	v. g.	T.	M.
18	Salem.....	l.	r.	p.	g.	M.	M.
	<i>Rogers' No. 22.</i>						
19	Telegraph.....	l.	m. r. o.	b.	v. g.	T. M.	E.
	<i>Christine.</i>						
20	Wilder.....	l.	l. r.	b.	v. g.	T. M.	M.
	<i>Rogers' No. 4.</i>						

REMARKS ON THE LIST OF GRAPES.

No. 1—*Allen's Hybrid*. A luxuriant grower and abundant bearer, and when well ripened one of the most delicious varieties of the Sweetwater class; but rather too late to be recommended for general culture in this State.

No. 2—*Adirondac*. A feeble grower while young. Fruit free from pulp, and of fine flavor. Needs further trial. Not uniformly reliable thus far.

No. 3—*Agawam*. Very handsome, and a good keeping variety. Flavor rich, spicy and good.

No. 4—*Clinton*. Fruit small, late and harsh. Valuable only for wine. Vine hardy. Not recommended.

No. 5—*Concord*. A free grower, and bears heavily, but does not generally mature its fruit in this State.

No. 6—*Creveling*. Of excellent quality, not rich, but entirely free from foxiness. Mildews badly in some localities.

No. 7—*Delaware*. Bunch and berry small, and not a good keeper, but in all other respects one of the most desirable varieties for general cultivation. Vine healthy and hardy, and an early and constant bearer. Requires rich soil and high culture.

No. 8—*Diana*. Rather late for Maine, but of fine quality, and the best keeping variety.

No. 9—*Eumelan*. Has not given satisfaction in this State.

No. 10—*Hartford Prolific*. Early, hardy, vigorous and productive, but fruit ripens unevenly and drops from the bunch.

No. 11—*Iona*. Of high flavor and a good keeper, but too late for general cultivation in Maine. Requires rich, warm soil. Vine and foliage healthy.

No. 12—*Isabella*. An old, standard variety. Largely superceded by earlier and better sorts. A free grower, and hardy.

No. 13—*Israella*. A thick skinned variety and a good keeper. Not desirable, being of inferior quality.

No. 14—*Lindley*. One of the earliest and best of Rogers' hybrids. Bunch and berry handsome. Of good quality and excellent keeper.

No. 15—*Merrimack*. Another valuable acquisition among Rogers' hybrids. Ripens uniformly and well, and gives general satisfaction. Vigorous and productive.

No. 16—*Miles*. Very early. Fruit too small for market.

No. 17—*Rebecca*. Of fine flavor and keeps well. Of slender growth and tender when young, but a healthy grower when established.

No. 18—*Salem*. Not as reliable or satisfactory as the other well known varieties of the same class. Foliage mildews badly. Flavor rich, aromatic and sweet. Needs further trial.

No. 19—*Telegraph*. Not much known in this State, but highly recommended elsewhere for its earliness and general good qualities.

No. 20—*Wilder*. Vigorous. Foliage strong and healthy. Requires a strong, rich soil. A reliable and valuable variety but a little later than some others of its class.

In addition to the above list the following named varieties (among others) have been introduced and considerably grown in this State, viz: Black Hawk, Croton, Massasoit (*Rogers No. 3*), Martha, Perkins, Northern Mascadine, Union Village, Walter.

VI—FOREIGN GRAPES.

The catalogue of the American Pomological Society contains thirty-three varieties of foreign grapes, nearly all of which, with many others, are grown in this State; and being cultivated exclusively under glass they are exempt from the variations induced by climate or soil, and therefore equally adapted to all localities. The description embraces color, flavor, season, and the character of the vinery—whether hot or cold—in which they are grown. It is not perceived that the insertion of such a list will be of material service to cultivators of this class of grapes, the information which it would contain being within their reach in other forms; hence it is omitted.

VII—BLACKBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—ob. c., oblong conic; ov., oval; ob. ov., oblong oval. "Quality"—v. g., very good; b., best. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Quality.	Season.
1	Dorchester.....	m.	ob. o.	b.	M.
2	Kittatinny.....	l.	ov.	b.	M.
3	Wilson's Early.....	l.	ob. ov.	v. g.	E.

VIII—CURRANTS.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form of bunch"—m., medium; s., short. "Color"—r., red; b., black; w., white. "Quality"—a., acid; m. a., moderately acid; v. a., very acid. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form of bunch.	Color.	Quality.	Season.
1	Black Naples.....	l.	s.	b.	m. a.	M.
2	Cherry.....	l.	s.	r.	v. a.	M.
3	La Versailles.....	l.	s.	r.	a.	M.
4	Ogden's Black.....	l.	m.	b.	m. a.	M.
5	White Grape.....	m.	m.	w.	m. a.	E.

2 Shy bearer, very sour. 3 Good bearer. 4 Resembles Black Naples, but a more vigorous grower and quality better. 5 The best white currant.

IX—GOOSEBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—o., oval; r. o., roundish oval. "Color"—r., reddish; g., greenish yellow. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Season.
1	Downing.....	m.	r. o.	g.	v. g.	M L.
2	Houghton.....	s.	r. o.	r.	g.	E.
3	Smith's Improved.....	l.	o.	g.	v. g.	M.

1 Of upright habit, productive, desirable. 2 Drooping, vigorous. 3 New; promises well.

X—RASPBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—r., roundish; c., conical; ob. c., obtuse conical. "Color"—r., reddish; p., purplish; y., yellow; b., black. "Quality"—g., good; v. g., very good; b., best. "Use"—M., market; F. M., family and market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Clarke.....	m.	r.	r.	g.	F. M.	E.
2	Davison's Thornless.....	m.	r.	b.	g.	F. M.	E.
3	French.....	m.	r.	r.	v. g.	F.	M.
4	Golden Thornless.....	m.	r.	y.	g.	F.	M.
5	Knevett's Giant.....	l.	ob. c.	r.	b.	F.	M.
6	McCormick..... <i>Mammoth Cluster.</i>	m.	ob. c.	b.	v. g.	F. M.	L.
7	Orange.....	l.	c.	y.	b.	F.	M.
8	Philadelphia.....	m.	r.	p.	g.	M.	M.

3 A good grower. 4 A cap variety. 5 Strong grower and very productive. 6 Profitable for market. 7 Fruit tender; valuable for family use. 8 Very productive.

XI—STRAWBERRIES.

ABBREVIATIONS: "Size"—l., large. "Form"—o. c., obtuse conical; r. c., roundish conical; r. o. c., roundish, obtuse conical. "Color"—b. s., bright scarlet; l. c., light crimson; d. c., deep crimson. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Season.
1	Hovey's Seedling.....	l.	r.	b. s.	v. g.	M.
2	President Wilder.....	l.	r. o. c.	b. s.	v. g.	M.
3	Triomphe de Gand.....	l.	o. c.	l. c.	g.	M.
4	Wilson's Albany.....	l.	r. c.	d. c.	g.	E. to L.

1 An old and highly valued sort. Pistillate. 2 One of the best, of recent introduction. 3 Uneven in size. 4 Hardy and productive. Best variety for market, and fair eating when thoroughly ripe.

Of the large list of strawberries of recent introduction, the most have proved tender in habit or shy bearers.

APPENDIX.

ACT OF INCORPORATION.

STATE OF MAINE.

IN THE YEAR OF OUR LORD ONE THOUSAND EIGHT HUNDRED AND SEVENTY-THREE.

An Act to Incorporate the Maine State Pomological Society.

Be it Enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION 1. Z. A. Gilbert, George W. Woodman, A. L. Simpson, George B. Sawyer, J. C. Weston, Charles Pope, Samuel Rolfe, James A. Varney, Albert Noyes, Rufus Prince, J. C. Madigan, S. F. Perley, Hannibal Belcher, J. B. Phillips, Joseph Taylor, Harvey Counce, John Currier, William Swett, Henry McLaughlin, Calvin Chamberlain, Washington Gilbert, George O. Weston, Hiram Chase, J. C. Talbot and S. L. Goodale, their associates and successors, are hereby constituted a corporation for the promotion of fruit culture, by the name of THE MAINE STATE POMOLOGICAL SOCIETY.

SEC. 2. Said society shall have all the rights, privileges and powers conferred by the laws of this State upon county and local agricultural societies, and shall be subject to all liabilities imposed by existing laws upon such societies, so far as the same are applicable to the objects of this society; but the bounty to be paid by the State to said society shall not exceed the sum of five hundred dollars in one year.

SEC. 3. Said society shall have power to elect such officers, and adopt such by-laws and regulations, not inconsistent with the laws of this State, as may be necessary to carry into effect the objects of the society.

SEC. 4. The first meeting of said society may be called by A. L. Simpson, J. C. Weston and Geo. B. Sawyer, by a notice signed by them, stating the time and place of said meeting, to be published two weeks successively in the Maine Farmer, the last publication to be seven days at least before the time of said meeting.

SEC. 5. This act shall take effect when approved.

[Approved February 17, 1873.]

BY-LAWS

OF THE

MAINE STATE POMOLOGICAL SOCIETY.

AS AMENDED JANUARY 29, 1874.

ARTICLE I.—MEMBERSHIP.

SECTION 1. Any person may become a member of this Society by signifying his wish to do so and paying to the Treasurer the sum of one dollar.

SEC. 2. Any person may become a life member by paying the Treasurer the sum of ten dollars; and the Treasurer's certificate thereof shall entitle such member, with his wife and minor children, to admission to all the exhibitions of the Society.

SEC. 3. Each member (excepting life members) shall pay to the Treasurer an annual fee of one dollar; and the Treasurer's certificate thereof shall entitle him to admission to all the exhibitions of the Society for that year.

SEC. 4. Any member who shall neglect, for the term of two years, to pay his annual assessment, shall cease to be a member of the Society; and the Treasurer shall erase his name from the list of members. Any member may, at will, withdraw from the Society on giving notice to the Treasurer, and paying the amount due from him to the Society.

SEC. 5. Ten members shall constitute a quorum.

ARTICLE II.—OFFICERS.

SECTION 1. The officers of the Society shall consist of a President, two Vice Presidents, Secretary, Corresponding Secretary, Treasurer, and an Executive Committee, consisting of three members exclusive of the President and Secretary, who shall be members *ex-officio*, and one Trustee for each county in the State; all of whom shall be elected by ballot at the annual meetings, and hold their respective offices during the calendar year for which they shall be elected, and until their successors are elected. In the event of a failure to elect the said officers, or any of them, at such meeting, an election shall be held at the next meeting of the Society duly called and holden.

SEC. 2. All the officers shall perform the customary duties of their respective offices, and such further duties as are herein specified or shall from time to time be imposed upon them.

SEC. 3. The Secretary shall keep a true record of the proceedings of the Society and of the Executive Committee, keep an alphabetical list of the members, and make all reports required or authorized by law.

SEC. 4. The Corresponding Secretary shall conduct the correspondence of the Society. He shall open and maintain correspondence with other Pomological and Horticultural Societies for the purpose of effecting an exchange of publications with the same, for the permanent use of this Society; and shall present at each annual meeting, a report,

embracing a review of the proceedings of such Societies, and the substance of all such matters therein as he shall deem to be of special interest to this Society.

SEC. 5. The Treasurer shall keep all moneys of the Society and disburse the same only upon the written orders of the Executive Committee. He shall render his accounts annually to the Executive Committee, and give such bond as said Committee may require. He shall keep a record of the names of the members of the Society, and shall from time to time transmit to the Secretary the names of all new members and of such persons as have ceased to be members.

SEC. 6. The Executive Committee shall have the general management and oversight of the affairs of the Society; transact its business, and appoint all standing and special committees, when not otherwise provided for; examine the accounts of the Treasurer, and make an annual report to the Society, of their doings and of the financial affairs of the Society.

SEC. 7. The Trustees shall represent the Society and act as its agents in their respective counties. They may receive applications for membership, and forward the same, with the fees therefor, to the Treasurer, and shall promote the interest of the Society in their respective counties.

SEC. 8. Whenever the office of President shall become vacant, the Vice Presidents shall succeed to his office, in the order of seniority, for the remainder of the year; and any vacancy occurring in any other office may be filled by appointment by the Executive Committee; the person so appointed holding the office for the remainder of the year.

ARTICLE III.—MEETINGS.

SECTION 1. The Annual Meeting of the Society shall be held at the place and during the time of the Annual Autumn State Exhibition, and such notice thereof shall be given as the Executive Committee shall direct. If, from any cause, the regular Annual Meeting shall not be held as above provided, a special meeting shall be held at Augusta in the month of January next following.

SEC. 2. Special meetings may be called at any time by the Executive Committee; of which meetings each member shall be notified, by a notice properly directed and deposited in some post office at least ten days prior to the time of such meeting.

ARTICLE IV.—FUNDS.

The fees for life membership shall constitute a permanent fund, to be safely invested by the Treasurer under the direction of the Executive Committee, and of which only the interest shall be used for the disbursements of the Society.

ARTICLE V.—AMENDMENTS.

These By-Laws, except Sec. 2 of Article 1, may be altered or amended at any annual meeting of the Society, by the concurrence of two-thirds of the members present, *provided, however*, that Article 4 shall not be so amended without notice given and entered on record at the preceding Annual Meeting.

TREASURER'S REPORT FOR THE YEAR 1874.

CHARLES S. POPE, *Treasurer, in account with the Maine State Pomological Society.*

Dr.

To cash in the treasury, January 1, 1874.....	\$ 2 46
amount received from the State, bounty for 1873.....	500 00
entry fees and unclaimed premiums of 1873	49 00
amount received of life members.....	40 00
“ “ “ annual members.....	63 00
“ “ for sale of tickets, exhibition of 1874.....	389 50
“ “ “ fruit, &c.....	13 25
	<hr/> \$1,057 21

Cr.

By unpaid premiums of 1873, (Jan. 1, 1874).....	\$59 00
paid loan to First National Bank of Wiscasset.....	300 00
“ interest on same.....	4 40
“ outstanding orders of 1873, in full (except premiums)	99 27
“ orders of Executive Committee, 1874.....	457 59
“ on account of premiums of 1874.....	25 00
By cash in treasury, December 31, 1874	111 95
	<hr/> \$1,057 21

CHARLES S. POPE, *Treasurer.*

REPORT OF THE EXECUTIVE COMMITTEE FOR THE YEAR 1874.

To the Members of the Maine State Pomological Society:

The Executive Committee hereby report that they have examined the account of the Treasurer, for the year ending December 31, 1874, and have found the same to be correctly stated and properly vouched.

They have drawn orders on the Treasurer during the year as follows:

For expenses of officers.....	\$145 25
Interest on loan.....	4 40
Postage, telegraph and express bills.....	16 24
Expenses of winter meeting, 1874.....	23 59
Record books, stationery and printing.....	16 25
Binding and stitching annual reports for 1873.....	23 50
Advertising and printing for annual exhibition, 1874.....	70 64
Payment of other expenses of “ “	182 62
Payment of premiums at “ “	683 00
	<hr/> \$1,171 49

The officers of the Society have received no compensation except for actual expenses in attending to its business.

The financial condition of the Society, on the 31st day of December, 1874, was as follows:

RESOURCES.

Permanent Fund.....	\$180 00
Cash in the Treasury.....	111 95
Amount due from the State, for 1874.....	500 00
Amount due from Portland Horticultural Society, and in process of adjustment by settlement of premiums.....	239 73
Property owned by the Society.....	50 00
Entry fees and unclaimed premiums, estimated.....	50 00
	<hr/>
	\$1,131 68

LIABILITIES.

Amount due and payable for premiums.....	\$658 00	
“ of other orders drawn and unpaid.....	26 50	
“ of bills not rendered, estimated.....	200 00	
“ due Permanent Fund, as a loan.....	180 00	1,064 50
	<hr/>	
Balance, being net assets.....		\$67 18

By order of the Executive Committee.

GEO. B. SAWYER, *Secretary.*

AUGUSTA, January 21, 1875.

MEMBERS OF THE SOCIETY.

Including all names registered up to March 3, 1875.

[(L.) indicates Life Members.]

NOTE.—Changes of residence or errors should be promptly reported to the Secretary.

A.

Adams, Loren.....	East Wilton	Atherton, W. P. (L.).....	Hallowell
Allen, C. F.....	Orono	Atherton, H. N. (L.).....	Hallowell
Abbott, Lyman F.....	Wilton	Atkins, Charles G. (L.).....	Bucksport
Atwood, Fred (L).....	Winterport	Abbot, H. G.....	Vassalborough

B.

Belcher, Hannibal.....	Farmington	Blaney, Arnold.....	Bristol
Boardman, Samuel L.....	Augusta	Bearce, Chandler.....	Bristol
Barr, Benjamin A.....	Bangor	Brightman, Benjamin F.....	Bristol
Barr, T. W.....	Bangor	Bell, James B.....	Augusta
Bliss, Hiram.....	Washington	Badger, Wm. S.....	Augusta
Bailey, B. C.....	Bath	Bradford, Joseph.....	Portland
Bailey, S. D.....	Bath	Butler, E. K.....	Hallowell
Brackett, George E.....	Belfast		

C.

Counce, Harvey.....	Thomaston	Chamberlain, David.....	Bristol
Currier, John.....	Waldborough	Chapman, C. D.....	Orrington
Chamberlain, Calvin.....	Foxcroft	Clapp, Charles Jr.....	Bath
Chase, Hiram.....	Belfast	Carpenter, James M.....	Pittston
Colburn, Horace.....	Windsor	Clark, Eliphalet (L.).....	Portland
Carr, Albert C.....	East Winthrop	Coburn, Edwin.....	Portland
Crosby, William C. (L.).....	Bangor		

D.

Dennison, A. L.....	Portland	Duncan, W. C.....	Bath
Dunham, D. M.....	Bangor	Dyer, Milton.....	Cape Elizabeth
Duncan, George W.....	Bath	Dill, Seward.....	Phillips

E.

Emerson, Albert (L.)	Bangor	Elliott, John S	Bath
Emerson, John.....	Howland		

F.

Foster, S. G.....	Wilton	Fuller, A. J.....	Bath
Farrington, J. R.....	Orono	Farley, E. Wilder.....	Newcastle
Farrington, Henry.....	Waldoborough	Freeman, William Jr.....	Cherryfield
Flint, George.....	North Anson	Farnsworth, B. B. (L.).....	Portland

G.

Gilbert, Z. A., (L.).....	East Turner	Greenwood, Charles M.....	South Anson
Gilbert, Washington.....	Bath	Getchell, Ira E.....	Winslow
Goodale, S. L	Saco	Garland, Herbert M.....	Bangor
Gilbert, Henry A.....	East Turner	Godfrey, John E. (L).....	Bangor
Glidden, Oakman F.....	North Whitefield	Gould, Edward.....	Portland
Gray, Edwin.....	Starks	Guild, Samuel.....	Augusta

H.

Hayden, William D.....	Madison	Harris, N. C. (L.).....	Auburn
Harlow, S. C., (L.)	Bangor	Heman, J. A.....	Augusta
Hubbard, Wales	Wiscasset	Haskell, Aretas.....	Pittsfield
Hoffses, Elmas	Warren	Hanscom, John.....	Saco
Hight, B. M.....	Skowhegan	Hersey, T. C.....	Portland
Hitchcock, J. P.....	Bath	Hoffses, J. J. A.....	East Jefferson
Hobson, Isaac T.....	Wiscasset		

I.

Ingalls, Henry, (L.).....	Wiscasset
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J.

Jellison, C. T.....	Lewiston	Jewett, George (L.)	Portland
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K.

Kimball, J. H.....	Bath
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L.

Lang, J. W.....	Brooks	Low, David P.....	Bath
Lovejoy, H. F.....	Winthrop	Low, S. S.....	Bangor
Lucas, L. L	St. Albans	Lennox, William P	Wiscasset
Lowe, Charles D.....	West Hampden	Libbey, Matthias.....	Portland
Low, Elijah (L).....	Bangor		

M.

McLaughlin, Henry (L.).....	Bangor	McLellan, Charles H.....	Bath
Madigan, J. C.....	Houlton	Mallett, E. P.....	Bath
Marblo, S. S.....	Waldoborough	Moses, Oliver.....	Bath

Moore, J. E.....	Thomaston	Mower, Oliver.....	Greene
Millett, E. C.....	West Minot	Mower, J. C.....	Greene
Moore, Asa W.....	North Anson	Morton, Leander.....	Bristol
Marrett, A. W.....	Standish		

N.

Noyes, Albert (L.).....	Bangor	North, James W. Jr.....	Augusta
North, James W.....	Augusta		

P.

Pope, Charles S. (L.).....	Manchester	Percival, Warren.....	Vassalborough
Prince, Rufus.....	Turner	Perham, Sidney.....	Paris
Perley, S. F.....	Naples	Pope, Jacob.....	Manchester
Phillips, J. C.....	Dedham	Page, A. G.....	Bath
Pike, N. R.....	Winthrop	Perkins, Charles J.....	Bath
Place, W. S.....	Charleston	Patten, James T.....	Bath
Preble, George A.....	Bath	Patten, John.....	Bath
Percy, D. T.....	Bath	Payne, William E.....	Bath
Parkhurst, E. E.....	Maysville		

R.

Rolfe, Samuel (L.).....	Portland	Rice, William.....	Bath
Reed, Edwin.....	Bath	Roberts, B. M.....	Bangor

S.

Spaulding, Benjamim.....	Augusta	Simmons, H. J. A.....	Waldoborough
Sherburne, C. S.....	Prospect Ferry	Small, William H.....	Alna
Simpson, A. L.....	Bangor	Smith, Alfred.....	Monmouth
Sawyer, George B., (L.).....	Wiscasset	Swanton, John B.....	Bath
Swett, William.....	South Paris	Sewall, William B.....	Bath
Shaw, J. E.....	West Hampden	Sewall, E.....	Bath
Smith, Lewis C.....	West Hampden	Sewall, Arthur.....	Bath
Spaulding, Calvin.....	Hallowell	Sawyer, Andrew S. (L.)....	Cape Elizabeth
Stetson, Isaiah (L.).....	Bangor	Stanley, Charles.....	Winthrop
Smith, Samuel E.....	Wiscasset		

T.

Taylor, Joseph (L.).....	Belgrade	Tobie, E. P.....	Lewiston
Talbot, J. C.....	East Machias	Taber, Henry.....	Vassalborough
Tilton, William S. (L.).....	Chelsea	Thomas, Wm. W. Jr. (L.).....	Portland

V.

Varney, James A....	North Vassalborough	Vickery, James.....	Portland
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W.

Woodman, George W. (L.)	Portland	Wakefield, A. G.	Bangor
Weston, J. C. (L.)	Bangor	Whitcomb, A. C.	North Whitefield
Weston, George O.	Madison	Wakefield, J. W.	Bath
Winslow, Lyman H.	Nobleborough	Woodward, F. M.	Winthrop
Wasson, Samuel	East Surry		

Total, 164 members; all resident within the State, and representing the several counties as follows, viz: Kennebec, 29; Sagadahoc, 28; Penobscot, 25; Lincoln, 21; Cumberland, 17; Androscoggin, 9; Somerset, 9; Franklin, 5; Waldo, 5; Knox, 4; Hancock, 3; Aroostook, 2; Oxford, 2; Washington, 2; York, 2; Piscataquis, 1; (27 Life Members.) During the year one member has withdrawn, and one—Elisha Purring-ton of Madison—has deceased. Increase since January 29, 1874; 15 annual members and 13 life members.

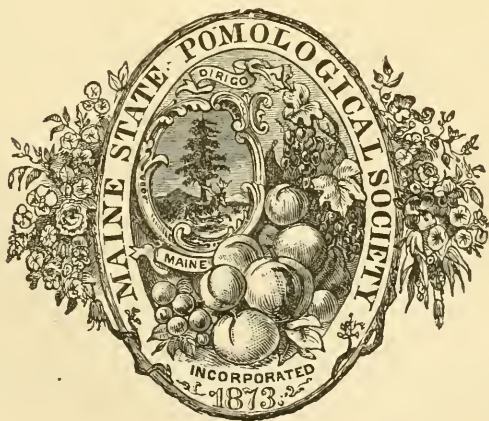


GRANITE BEAUTY APPLE.

[From an engraving furnished by J. W. Manning, Reading, Mass.]

THIRD ANNUAL REPORT
OF THE
SECRETARY
OF THE
MAINE STATE POMOLOGICAL SOCIETY,
FOR THE YEAR
1875;

Also Embracing the Transactions of the Winter Meeting and Fruit Growers'
Convention, held at Lewiston, February 22d and 23d, 1876.



AUGUSTA:
PRESS OF SPRAGUE, OWEN & NASH.
1876.

“ —— It is a goodly sight to see
What Heaven hath done for this delicious land !
What fruits of fragrance blush on every tree !
What goodly prospects o'er the hills expand !
The vine on high, the apple boughs below,
Mixed in one happy scene, with varied beauty glow.”

INTRODUCTORY NOTE.

In presenting to the members and correspondents of the MAINE STATE POMOLOGICAL SOCIETY the third annual report of its Transactions, I with sincere pleasure congratulate them on the continued prosperity and increasing usefulness of the Society, as shown by the character, variety and scope of the matter therein contained, all of which has been presented in the regular course of the proceedings instead of being solicited for the purpose of filling up the volume. In order to bring the work as nearly as possible within the limits prescribed by the Society's means, I have condensed it into the smallest possible compass, omitting many details of the routine transactions and everything which seemed not to be of general interest; also omitting the Act of Incorporation and By-Laws, which have heretofore been printed in the Appendix to each volume. For the same reason the Corresponding Secretary, Dr. Weston, kindly consented to strike out considerable portions of his report, giving to those portions which remained a somewhat disproportionate weight.

For other and quite unavoidable reasons the "descriptive list of apples," which was commenced in the preceding volume and intended to be completed in this, is omitted.

The discussions at the Winter Meeting were fully and faithfully reported by Mr. L. F. Starrett, an accomplished stenographer and a member of the Society; and have only been so far revised as, in my judgment, to divest them of the irrelevant and redundant matter which always finds its way into an extemporaneous discussion.

I wish here to express to the members of the Society as well as to the various other persons with whom I have corresponded or been associated in the preparation of this volume, my high appreciation of their uniform courtesy and kind consideration.

GEO. B. SAWYER.

WISCASSET, March, 1876.

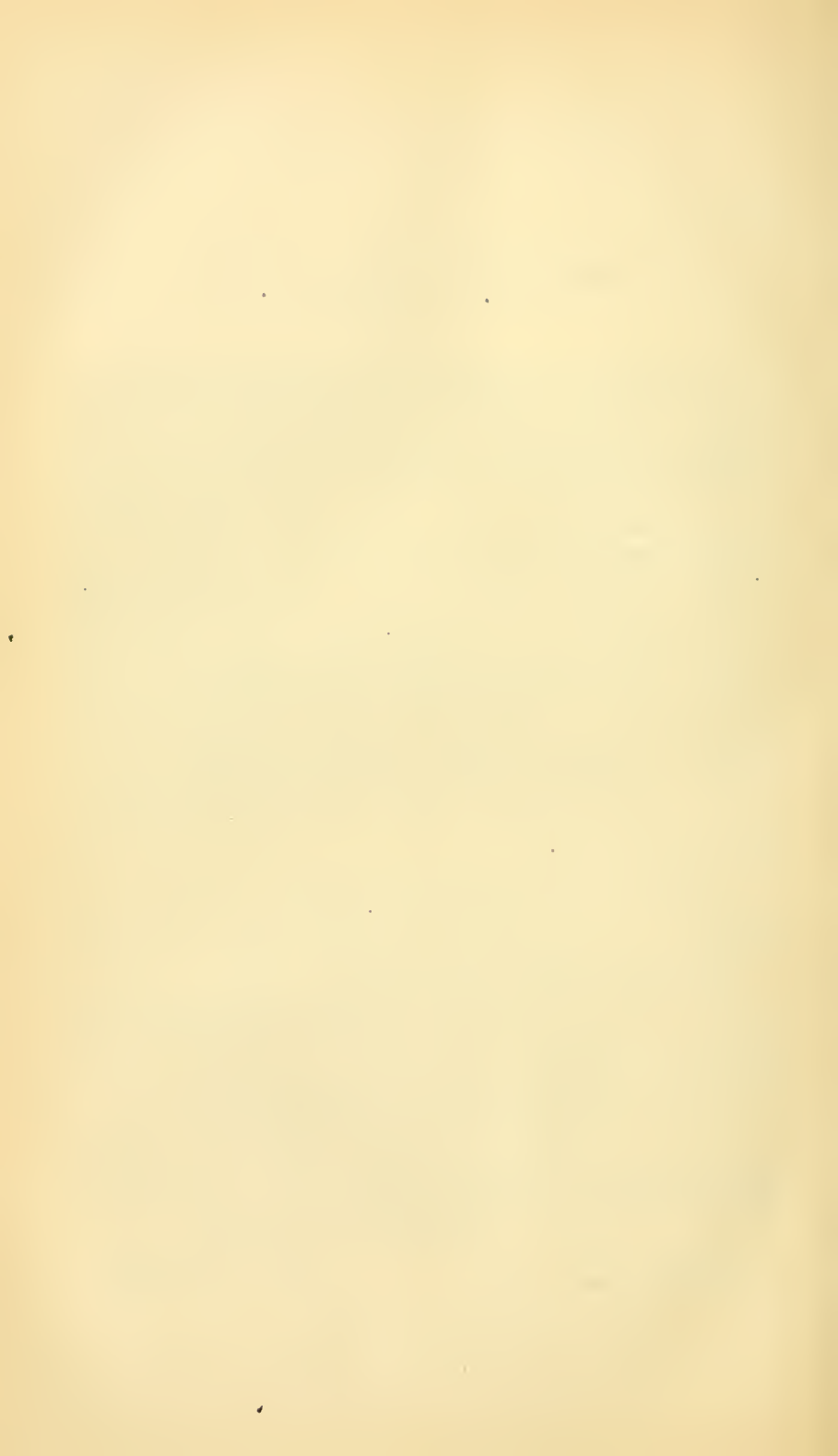


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MAINE STATE POMOLOGICAL SOCIETY.

Officers for the Year 1876.

PRESIDENT,

Z. A. GILBERT, EAST TURNER.

VICE PRESIDENTS,

GEORGE W. WOODMAN, PORTLAND,

A. L. SIMPSON, BANGOR.

SECRETARY,

GEORGE B. SAWYER, WISCASSET.

CORRESPONDING SECRETARY,

DR. J. C. WESTON, BANGOR.

TREASURER,

CHARLES S. POPE, MANCHESTER.

EXECUTIVE COMMITTEE,

The President and Secretary, *ex-officio*; SAMUEL ROLFE, Portland; JAMES A. VARNEY, North Vassalboro'; HENRY McLAUGHLIN, Bangor.

TRUSTEES:

Rufus Prince, Turner, Androscoggin Co.; Henry Tilley, Castle Hill, Aroostook Co.; S. F. Perley, Naples, Cumberland Co.; Hannibal Belcher, Farmington, Franklin Co.; C. G. Atkins, Bucksport, Hancock Co.; Joseph Taylor, Belgrade, Kennebec Co.; Elmas Hoffses, Warren, (P. O. Waldoboro') Knox Co.; H. J. A. Simmons, Waldoboro', Lincoln Co.; Dr. A. L. Hersey, Oxford, Oxford Co.; Albert Noyes, Bangor, Penobscot Co.; Calvin Chamberlain, Foxcroft, Piscataquis Co.; Washington Gilbert, Bath, Sagadahoc Co.; Geo. O. Weston, Madison, Somerset Co.; J. W. Lang, Brooks, Waldo Co.; William Freeman, Jr., Cherryfield, Washington Co.; S. L. Goodale, Saco, York Co.

Maine State Pomological Society.

TRANSACTIONS FOR 1875.

The general purposes of this Society, and the plan and methods of its operations, so far as they have been determined upon, as well as the history of its inception and organization, have been fully stated in the preceding volumes of its transactions. The constantly increasing amount of valuable matter in the form of reports, essays, discussions and addresses, which give to these volumes their chief value, as well as a due regard for economy in publication, require me to condense my general report to the smallest possible dimensions.

The annual address of the President, (delivered at the Winter Meeting, and published in subsequent pages of this report) presents a general statement of the work of the Society for the year, the condition and prospects of fruit culture in the State, the principal fruit crops grown, the success attending their culture as compared with previous years, and the obstacles met with, together with important suggestions for future operations; and leaves but little to be said here upon these specific points.

It is no longer a debatable question whether the State of Maine needs or can maintain a society devoted to the promotion and encouragement of the important interest of fruit-culture, and the various arts and industries which naturally associate themselves with it; but among the numerous organizations devoted to agriculture in general or to special departments, and the many public charities and beneficent enterprizes of the day, all appealing to the people of the State for recognition and support, and indicating a substantial progress in civilization, and with all of which this Society is in sympathy, its efficient maintenance requires great vigilance and circumspection, and calls for exertions and sacrifices which are sometimes onerous on the part of the comparatively

small number of individuals who are willing to work for it. The Society is, however, gradually drawing into its membership the most skilful fruit-growers and horticulturists of the State, and each year makes valuable accessions to its working force; and the proportion of life members among them indicates a permanent interest in its objects and gives assurance of its stability. With the formation of a better acquaintance among the members there has grown up a spirit of good fellowship, which has prevented the manifestation of undue selfishness and added zest and pleasure to our labors.

The system adopted by this Society, of reserving all fees for life membership as a permanent fund, of which only the interest can be used for current expenditure, is believed to be correct in principle and beneficial in operation. There can be no doubt that it will ultimately give the Society a larger annual income than could be derived from exclusively "annual memberships;" and it obviates the objection which prudent persons generally make to life memberships, viz: that the money paid therefor is liable to be used for current expenditure, and the Society burdened with a non-productive membership. By reference to the By-Laws, the financial reports and the list of members, appended to this and former reports, it will be seen that this wise provision has been strictly adhered to in practice and guarded with all possible guarantees for the future. We therefore feel fully justified in the frequent appeals which the Society has made and still makes to individuals to become Life Members.

The efforts of the Society during the past year have been directed to carrying out, as far as its means would permit, the plans previously determined upon. The *results* of these efforts cannot reasonably be expected to appear with great distinctness at this early day; yet we have the best reason to believe that they have already proved beneficial in stimulating activity of thought and disseminating useful information by means of our publications, meetings and exhibitions. This will necessarily lead to a more intelligent and careful attention to all the details of the business of fruit production. These results are already foreshadowed; and to lead in, and give the proper direction to this reformation is the obvious mission of this Society.

Some points, both in theory and practice, have been definitely settled by the Society, and although they will in the nature of things, still continue to be discussed through the newspapers and

elsewhere, the Society will rest on its decisions as final. Among these are the adaptability of our State to general fruit culture, the home production of our fruit trees, the certainty of profitable results from high cultivation, the feasibility of pear culture in this State,* etc. Many other questions, equally important, remain to be settled.

The catalogue of varieties of fruit to be recommended for cultivation received careful attention at the Winter Meeting, and is re-published in this volume with such modifications as were there made. It is still open for correction, and cultivators are requested to give it the most careful scrutiny.

It will be seen by the Report of the Corresponding Secretary that the exchange of publications with similar societies in other States has been carried on more fully than in previous years, and by this means the Society is enabled to present to the public in a condensed form a large amount of valuable information not otherwise accessible. These publications will also, with such other works as may be donated or purchased for the purpose, form a valuable library for the use of the members. The library has not yet assumed sufficient proportions to justify the publication of a catalogue or the adoption of regulations for its use. There have been added, besides the volumes mentioned in the Corresponding Secretary's report, the following works not previously acknowledged, viz :

"SELECTED FRUITS, from Downing's Fruits and Fruit Trees of America; by Charles Downing." Presented by the author.

"THE SCIENTIFIC AND PROFITABLE CULTURE OF FRUIT TREES, from the French of M. Du Breuil; * * * by William Wardle. Presented by The Orange Judd Company, New York.

"TRANSACTIONS OF THE AMERICAN POMOLOGICAL SOCIETY," 1852, 1854, 1867, 1869, 1871 and 1873. Presented by G. B. Sawyer.

The Society is still in want of standard text books on Pomology and Horticulture.

THE THIRD ANNUAL EXHIBITION.

In accordance with the wish of the Society as expressed at the Winter Meeting of 1874-5, as well as to avoid the inconveniences to the public arising from the holding of the exhibitions of two prominent State societies at, or nearly at the same time, the

* See report of Committee on this subject in proceedings of the Winter Meeting.

Executive Committee accepted the invitation extended early in the season by the Trustees of the State Agricultural Society to the other State societies, to a mutual conference on the subject. This resulted in the adoption of a plan for a consolidated exhibition, to be held at Portland, September 21st to 24th inclusive. The arrangement was consummated and carried out to our entire satisfaction. The departments of Fruit, Flowers, Vegetables and Farm Crops were placed under the exclusive control of the Pomological Society. The Portland Horticultural Society afterwards became a party to the arrangement and contributed largely to the success of the exhibition. Some inconvenience was experienced from the want of room for so extensive and varied an exhibition as was thus brought together. Nearly every part of the spacious City Building was occupied, as well as grounds of the Presumpscot Park Association; and yet the space assigned to our department proved insufficient to allow of a favorable arrangement. In what is hereafter said in relation to the exhibition we shall be understood as speaking only of the departments assigned to this Society.

In accordance with the purposes which the Society has kept in view from the outset, of making each exhibition more instructive than the preceding one; of introducing each year new and valuable features suggested by its experience, and of offering premiums sufficient to bring out the best possible exhibition of the horticultural products of the State, the previous premium lists were carefully revised. The amount offered in premiums was \$1,232.00, of which \$850.00 was guaranteed by the Board of Managers of the consolidation. The amount of premiums and gratuities awarded was \$871.00, exclusive of \$35.00 in special premiums offered and paid by Mr. James Vick.

The following schedule exhibits the premiums offered, the conditions affixed, the entries, and the premiums awarded.

[NOTE.—The names of persons to whom premiums were awarded are given first, under each specification, with the amount awarded, and afterwards the names of other competitors for the same. When the name of a person is *repeated* the place of residence is omitted.]

CLASS 1.—*Apples.*

FIRST DIVISION.

[Committee.—A. L. Simpson, Bangor; E. R. Sweetser, Cumberland Centre.]

Entries for all premiums in this division were required to consist of five specimens each of at least twenty named varieties.

Premium No. 1. For the best general collection of apples from any county in the State, (not necessarily grown by the exhibitor.)

Charles S. Pope, Manchester, first premium, \$25; S. R. Sweetser, Cumberland Centre, second premium, \$15. Andrew Curtis, Bowdoinham; J. M. Richardson, Greene; Alfred Smith, Monmouth; S. C. Harlow, Bangor.

2. For the best general collection of apples, grown by the exhibitor, in Androscoggin County. J. M. Richardson, Greene, \$10.

3. For the same in Aroostook County. (No entry.)

4. For the same in Cumberland County. E. C. O'Brien, Deering, \$10; Ivory Jordan, New Gloucester; Henry M. Chase, North Yarmouth; William F. Fessenden, Bridgton; Milton Dyer, Cape Elizabeth.

5. For the same in Franklin County. (No entry.)

6. For the same in Hancock County. (No entry.)

7. For the same in Kennebec County. Joseph Taylor, Belgrade, \$10; Alfred Smith, Charles S. Pope.

8. For the same in Knox County. (No entry.)

9. For the same in Lincoln County. Henry Ingalls, Wiscasset, \$10.

10. For the same in Oxford County. (No entry.)

11. For the same in Penobscot County. S. C. Harlow, \$10.

12. For the same in Piscataquis County. (No entry.)

13. For the same in Sagadahoc County. Minot M. Wilson, Bowdoinham, \$10.

14. For the same in Somerset County. (No entry.)

15. For the same in Waldo County. Mrs. A. B. Strattard, Monroe, \$10.

16. For the same in Washington County. (No entry.)

17. For the same in York County. John Hanscom, Saco, \$10.

SECOND DIVISION.

[Committee.—H. J. A. Simmons, Waldoboro'; Otis L. Carter, Etna; Samuel Rolfe, Portland.]

Entries for premium Nos. 18 to 22 inclusive, were required to consist of five specimens of each variety exhibited, and any person receiving the first or second premium for the best general exhibition of apples (No. 18) was thereby debarred from taking any premium under Nos. 19 and 20.

18. For the best general exhibition of apples. Joseph Taylor, \$20; Alfred Smith, \$15; S. C. Harlow, \$10. Ivory Jordan, E. C. O'Brien, J. M. Richardson, Charles S. Pope.

19. For the best twenty named varieties of apples. J. M. Richardson, \$15; Charles S. Pope, \$12; Otis L. Carter, Etna, \$8. Joseph Taylor, Wm. F. Fessenden, John Hanscom, Henry Ingalls, Alfred Smith; J. L. Davis, New Gloucester.

20. For the best ten named varieties of apples. Henry M. Chase, \$10; F. M. Woodward, Winthrop, \$8; Henry Ingalls, \$5. S. D. Pittee, Cumberland Centre; Calvin Spaulding, Hallowell; Seward Dill, Phillips; Joseph Taylor, John Hanscom, C. S. Robbins, Milton Dyer, J. M. Richardson; P. Duffey, gardener to J. B. Brown, Portland; Alfred Smith, C. S. Pope.

21. For the best five named varieties fall apples. Joseph Taylor, \$8; Henry M. Chase, \$5; Otis L. Carter, Etna, \$3. Sewall Whitney, Cumberland Centre; Calvin Spaulding; Charles Sampson, New Gloucester; John Hanscom, C. S. Robbins, J. M. Richardson, Alfred Smith, C. S. Pope.

22. For the best five named varieties of winter apples. C. S. Pope, \$8; Milton Dyer, Cape Elizabeth, \$5; S. R. Sweetser, \$3. Henry M. Chase, Charles Sampson, Joseph Taylor, John Hanscom, C. S. Robbins, Geo. B. Sawyer, J. M. Richardson, Alfred Smith, Otis L. Carter.

Entries for premiums Nos. 23 to 50 inclusive, were required to consist of twelve specimens of each variety exhibited.

23. For the best single variety of autumn apples. Joseph Taylor, (Somerset,) \$3; Otis L. Carter, \$2. E. C. O'Brien, L. J. Perkins, Deering; Calvin Spaulding, J. J. Gilbert, East Deering; John Hanscom, J. M. Richardson, Alfred Smith, (Porter,) S. C. Harlow, (Gravenstein), C. S. Pope, (Dean).

24. For the best single variety of winter apples. Chas. S. Pope, (King of Tompkins Co.), \$3; S. C. Harlow, (Golden Ball), \$2. E. C. O'Brien, L. J. Perkins, Joseph Taylor, (Northern Spy), John Hanscom, (R. I. Greening), J. M. Richardson, Alfred Smith, (Roxbury Russet), D. L. Blanchard, Cumberland Centre, (Pomme Gris).

25. For the best dish of American Golden Russets. Otis L. Carter, \$2. Joseph Taylor.

26. Baldwins. Alfred Smith, \$2. H. H. Hay, Portland; Henry M. Chase, Sewall Whitney; Z. Dunnels, Newfield; Joseph Taylor, John Hanscom, C. S. Robbins, F. M. Woodward, Milton Dyer, J. M. Richardson.

27. Dean apples. Charles S. Pope, \$2. Joseph Taylor.

28. Duchess of Oldenburgh. Henry Tilley, Castle Hill, (Aroostook Co.), \$2. S. R. Sweetser, Calvin Spaulding, John Hanscom, S. C. Harlow.

29. Fall Harvey. F. M. Woodward, \$2. J. M. Richardson, Alfred Smith.

30. Gravenstein. J. M. Richardson, \$2. S. R. Sweetser, J. J. Gilbert, John Hanscom, C. S. Robbins, F. M. Woodward.

31. Hubbardston Nonesuch. Z. Dunnels, Newfield, \$2. Henry M. Chase, Calvin Spaulding, Joseph Taylor, John Hanscom, C. S. Robbins, F. M. Woodward, J. M. Richardson, Alfred Smith; J. F. McKann, New Gloucester.

32. Hurlbut. (No entry.)

33. Jewett's Fine Red. Alfred Smith, \$2. Henry M. Chase, Z. Dunnels, Joseph Taylor, C. S. Robbins.

34. King of Tompkins County. Charles S. Pope, \$2. Joseph Taylor, J. M. Richardson, D. L. Blanchard.

35. Minister. Z. Dunnels, \$2.

36. Mother. Charles S. Pope, \$2. Henry M. Chase, J. M. Richardson, Otis L. Carter, Mrs. A. B. Stratford.

37. Northern Spy. Joseph Taylor, \$2. S. R. Sweetser, J. J. Gilbert, C. S. Robbins, Milton Dyer, J. M. Richardson, Otis L. Carter.

38. Porter. Joseph Taylor, \$2. J. F. McKann, Henry M. Chase, Calvin Spaulding, C. S. Robbins, Milton Dyer, J. M. Richardson, Alfred Smith, D. L. Blanchard.

39. Red Astrachan. S. R. Sweetser, \$2. S. C. Harlow.

40. Rhode Island Greenings. Otis L. Carter, \$2. H. H. Hay, Henry M. Chase, S. R. Sweetser; John B. Chase, Knightville; Joseph Taylor, C. S. Robbins, Milton Dyer, J. M. Richardson, Alfred Smith.

41. Roxbury Russets. Alfred Smith, \$2. Z. Dunnels, Joseph Taylor, John Hanscom, C. S. Robbins, J. M. Richardson, Mrs. A. B. Stratford.

42. Sops of Wine. (Bell's Early.) Alfred Smith, \$2. Henry M. Chase, Seward Dill, S. C. Harlow.

43. Somerset. Joseph Taylor, \$2.

44. Tallman's Sweet. Otis L. Carter, \$2. C. S. Robbins, Milton Dyer, J. M. Richardson, Alfred Smith, D. L. Blanchard.

45. Williams' Favorite. S. C. Harlow, \$2. D. B. Wilson, Joseph Taylor, J. M. Richardson, Alfred Smith, C. S. Pope.

46. Winthrop Greenings. George B. Sawyer, Wiscasset, \$2. Calvin Spaulding, J. M. Richardson, Alfred Smith.

47. Yellow Bellflower. Milton Dyer, \$2. Z. Dunnels, Calvin Spaulding; G. W. Rich, Portland; Joseph Taylor, John Hanscom, J. M. Richardson, Alfred Smith, Mrs. A. B. Stratford.

48. Seedling Apples. Alfred Smith, (Smith's Seedling), \$3. S. R. Sweetser, M. M. Wilson, Seward Dill, C. S. Robbins, G. B. Sawyer, J. M. Richardson.

49. Crab Apples (one variety). Frank W. Sparrow, Deering, \$1.00. H. H. Hay, S. R. Sweetser; A. E. Bradford, Turner; Joseph Taylor, G. B. Sawyer, Alfred Smith, Mrs. A. B. Stratford, S. C. Harlow; Henry McLaughlin, Bangor.

50. Collection of Crab Apples. A. E. Bradford, Turner, \$3. G. B. Sawyer, Alfred Smith.

Gratuities—To John Hanscom, for fine exhibition, \$3; Z. Dunnels, for same, \$1; Henry M. Chase, single variety, \$2; J. J. Gilbert, Deering, Mountain Sweet, \$1.

Special Premium, offered by Fred Atwood, Winterport, Me.

For the best collection of apples, of not less than six varieties, twelve specimens each, grown by the exhibitor, in this State. An

Eagle Pruning Tool (valued at \$4). Awarded to Joseph Taylor; Calvin Spaulding, Alfred Smith.

There were other entries, as follows:—Z. Dunnels, Cat Heads and N. Y. Greenings; Chas. F. French, Portland, cluster of Crab apples on branch, and fifteen varieties apples, for exhibition only; Dr. Allen of Waterville, and S. L. Goodale of Saco, collections of apples, for exhibition only; G. B. Sawyer, American Golden Pippins.

CLASS 2.—*Pears*

[Committee.—B. B. Farnsworth, Portland; S. C. Harlow, Bangor; Joseph Taylor, Belgrade.]

Entries for premiums Nos. 51 to 54, inclusive, were required to consist of five specimens of each variety exhibited, and any person receiving the first or second premium for the best general exhibition of Pears (No. 51), was thereby debarred from taking any premium under Nos. 52 and 53.

51. For the best general exhibition of Pears. Samuel Rolfe, Portland, \$20; T. C. Hersey, Portland, \$15. E. C. O'Brien, Joseph Taylor, Henry Ingalls, Alfred Smith, Henry McLaughlin; Albert Emerson, Bangor.

52. For the best twenty named varieties of pears. George W. Woodman, Portland, \$15; Henry Ingalls, \$10.

53. For the best ten named varieties of pears. P. Wade, gardener to H. P. Storer, Portland, \$12; Joseph Taylor, \$8. T. C. Hersey, Calvin Spaulding, Henry Ingalls, Alfred Smith.

54. For the best five named varieties of pears. Sumner C. Rand, Portland, \$8; S. S. Low, Bangor, \$5. T. C. Hersey; Dr. J. C. Weston, Bangor; Calvin Spaulding, Joseph Taylor; P. Duffey, gardener to J. B. Brown, Portland; Geo. B. Sawyer, Alfred Smith.

Entries for premiums Nos. 55 to 84 inclusive, were required to consist of twelve specimens of each variety exhibited.

55. For the best single variety of fall pears. S. C. Harlow, Bangor, \$3; T. C. Hersey, \$2. E. C. O'Brien, Calvin Spaulding, Joseph Taylor, Alfred Smith.

56. For the best single variety of winter pears. Samuel Rolfe, \$3; Alfred Smith, \$2; Edward Gould, Portland; Charles Sampson, New Gloucester; E. C. O'Brien, Calvin Spaulding, Joseph Taylor.

57. For the best dish of Andrews pears. (No entry.)

58. Bartlett. Sumner C. Rand, \$2. Z. Dunnels; Mrs. T. B. Cook, Portland; S. S. Low, Alfred Smith.

59–63, inclusive. Belle Lucrative, Beurre d'Anjou, Beurre Bosc, Beurre Hardy, Beurre Superfin. (No entries.)

64. Beurre Clairgeau. Calvin Spaulding, \$2.

65. Beurre Diel. (Not awarded.) S. S. Low, Bangor.

66. Beurre Bachelier. (No entry.)

67. Clapp's Favorite. Samuel Rolfe, \$2. Z. Dunnels, L. J. Perkins, Milton Higgins, S. S. Low.

68. Doyenne Boussock. L. J. Perkins, Deering, \$2. Geo. W. Woodman, Calvin Spaulding; Rufus Prince, Turner; Henry McLaughlin.

69. Doyenne Sieuelle. Samuel Rolfe, \$2.

70. Duchess d'Angouleme. Charles Sampson, \$2. S. S. Low.

71. Flemish Beauty. Alfred Smith, \$2. Mrs. Wm. Moulton, Portland; Mrs. A. S. Littlefield, Portland; Z. Dunnels, Calvin Spaulding, Joseph Taylor, S. S. Low, Rufus Prince.

72. Fulton. Joseph Taylor, \$2. Calvin Spaulding.

73. Glout Morceau. Joseph Taylor, \$2. Alfred Smith.

74. Goodale. Joseph Taylor, \$2. G. W. Woodman, Calvin Spaulding.

75. Howell. G. W. Woodman, \$2.

76. Kirtland. G. W. Woodman, \$2.

77. Lawrence. G. W. Woodman, \$2. Joseph Taylor, G. B. Sawyer.

78. Louise Bonne de Jersey. Alfred Woodman, Portland, \$2. G. W. Rich, Sumner C. Rand, Alfred Smith.

79. Marie Louise. Alfred Smith, 2.

80. Seckel. Samuel Rolfe, \$2. G. W. Woodman, L. J. Perkins, Calvin Spaulding.

81. Sheldon. Joseph Taylor, \$2.

82. Urbaniste. (No entry).

83. Vicar of Winkfield. Alfred Smith, \$2. G. W. Woodman.

84. Seedling Pears. (Not awarded.) Entries by Joseph Taylor and Henry McLaughlin.

Gratuity:—To Henry McLaughlin, Bangor, for specimens of Eastern Belle and Indian Queen, \$3.

The Committee say: "Many dishes of fine fruit were exhibited worthy of premiums, but which are excluded under the rules, for want of the requisite number of specimens. Also some splendid dishes not entered for premiums, by Hon. S. L. Goodale of Saco. Seedlings were also exhibited (one variety, 'Madam Hemenway,' by Henry McLaughlin of Bangor, and two varieties, the 'Saco,' and the 'Milliken,' by Hon. S. L. Goodale of Saco), but being late varieties, their qualities could not be tested."

Mr. Goodale also exhibited fine specimens of Parsonage, Sheldon, Goodale, Nickerson, Indian Queen, Clapp's Favorite, Beurre Spence, Howell and Fulton, but they were unfortunately received too late for entry on the Committees' book.—Sec.

CLASS 3.—*Grapes.*

[Committee.—Dr. E. Clark, Portland; A. S. Sawyer, Cape Elizabeth; Joseph Taylor, Belgrade.]

85. For the best exhibition of foreign grapes, grown with fire heat. (No entry.)

86. For the best exhibition of foreign grapes, grown in cold grapery. T. C. Hersey, Portland, \$10; Patrick Wade, gardener

to H. P. Storer, Portland, \$8; Philip H. Brown, Portland, \$5. Geo. B. Sawyer. Wiscasset.

87. For the best cluster of Black Hamburg. T. C. Hersey, \$2. E. C. O'Brien, P. Wade, G. B. Sawyer, P. Duffey.

88. Wilmot's Hamburg. P. Duffey, \$2. E. C. O'Brien, T. C. Hersey, P. Wade.

89. Victoria Hamburg. T. C. Hersey, \$2. E. C. O'Brien, P. Wade.

90. White Frontignan. P. Duffey, \$2.

91. Grizzly Frontignan. T. C. Hersey, \$2.

92. White Muscat. H. P. Storer, \$2. P. Wade, G. B. Sawyer.

93. White Chasselas. P. H. Brown, \$2. G. B. Sawyer.

94. Lady Downes. (No entry.)

95. Buckland Sweetwater. H. P. Storer, \$2. P. Wade.

96. Trentham Black. George B. Sawyer, \$2.

97. West's St. Peters. P. H. Brown, \$2. T. C. Hersey, P. Wade, P. Duffey.

98. White Nice. T. C. Hersey, \$2. P. Duffey.

99. Red Chasselas. G. B. Sawyer, \$2. P. Wade.

100. Chasselas Masqué. (Not awarded.) G. B. Sawyer.

101. For best collection of grapes grown in open air. (No entry.)

102. " ten varieties " " " "

103. " five " " " "

104. For best single variety, open air. (Not awarded.) Joseph Taylor.

105. For the best six bunches Delaware. Z. Dunnels, \$1. G. B. Sawyer.

106. Concord. Z. Dunnels, \$1.

107. Hartford Prolific. Alfred Woodman, \$1. Z. Dunnels.

108. Rebecca. (No entry.)

109. Allen's Hybrid. G. B. Sawyer, \$1.

110-118 inclusive. Adirondack, Black Hawk, Creveling, Massasoit, Wilder, Lindley, Agawam, Merrimack, and Salem. (No entries.)

Gratuity, to George B. Sawyer, for fine specimens of Iona and Diana, grown under glass, \$2.

The Committee say: "The season has been exceptionally unfavorable for grape culture; mildew and cold weather have nearly ruined the crop."

"Your Committee would further say, that specimens not named in catalogue were exhibited by Hon. T. C. Hersey, of the following varieties: White Hamburg, Syrian and McReady's Early. Also by Patrick Wade, gardener to H. P. Storer, Esq., of the Black Prince, Muscat of Alexandria, and Golden Hamburg. A very excellent specimen of White Tokay was exhibited by Philip H. Brown, Esq. All of them deserve honorable mention."

CLASS 4.—*Plums, &c.*

[Committee.—Henry Ingalls, Wiscasset; W. Gilbert, Bath; C. S. Robbins, Winthrop]

119. For the best general exhibition of Plums, not less than six varieties. S. S. Low, Bangor, \$10; H. P. Storer, Portland, \$6; Elijah Low, Bangor, \$4. Calvin Spaulding, S. C. Harlow.

120. For the best dish of plums, of a single variety. S. S. Low, Bangor, for seedling named "Coombs," \$2. G. W. Woodman, Calvin Spaulding; Milton Higgins, Portland; Joseph Taylor.

121. For the best dish of Green Gage. (Not awarded.) D. W. Nash, Portland; P. Wade, S. S. Low.

122. Purple Gage. S. S. Low, \$1.

123. Red Gage. S. S. Low, \$1.

124. Yellow Gage. Elijah Low, \$1. P. Wade.

125. Prince's Imperial Gage. S. S. Low, \$1. Edward Gould, Portland.

126. Coe's Golden Drop. H. P. Storer, \$1. Edward Gould, Milton Higgins, J. R. Thompson.

127. General Hand. (No entry.)

128. Lawrence. Elijah Low, \$1.

129. McLaughlin. S. C. Harlow, \$1. P. Wade.

130. Reine Claude de Bavay. (No entry.)

131. Lombard. S. C. Harlow, \$1. P. Wade, Milton Higgins, J. R. Thompson.

132. Columbia. S. S. Low, \$1. P. Wade.

133. Magnum Bonum. (Not awarded.) D. W. Nash.

134. Washington. S. C. Harlow, \$1. S. S. Low.

135. Jefferson. Elijah Low, \$1. P. Wade.

136. Penobscot. (No entry.)

137. Smith's Orleans. (No entry.)

138. For the best dish of Peaches. Wm. A. Taylor, Portland, \$3. Henry M. Chase, North Yarmouth; H. Merrill, Portland; Mrs. Jane Cammett, Portland, all deserve honorable mention.

139. For the best dish of Apricots. (No entry.)

140. " " " Nectarines. "

141. " " " Quinces. "

142. For the best ornamental dish of fruit. Joseph Taylor, \$3; Mrs. A. B. Strattard, \$2.

143. For the best peck of cultivated Cranberries, (with statement). Seward Dill, Phillips, \$3; Otis L. Carter, Etna, \$2; C. S. Robbins, Winthrop, gratuity, \$2. Milton Dyer.

144. For the best Orange Tree in fruit. (No entry.)

145. " " " Lemon " " "

146. " " " Fig " " "

147. For the best exhibition of canned fruits, not less than five varieties, of domestic manufacture. Mrs. G. B. Sawyer, Wiscasset, \$3.

148. For the best exhibition of fruit jellies, not less than five varieties, of domestic manufacture. (No entry.)

149. For the best exhibition of dried fruits, domestic manufacture. Joseph Taylor, \$3. (Other exhibitions were made, but entered too late to compete for premium.)

150. For the best exhibition of Pickles, domestic manufacture. (No entry.)

151. For the best oil painting of fruits and flowers. (No entry.)

152. Best drawing, or other picture, of same. (No entry.)

Gratuities, to Mrs. G. B. Sawyer for tomato ketchup, \$1; Henry M. Chase for black damson plums, \$1.

The Committee say: "Calvin Spaulding, Milton Higgins, J. R. Thompson, D. W. Nash and Edward Gould, each exhibited some fine plums, but for want of correct names, of sufficient numbers, or other causes, were not entitled to premiums. * * *

The difference between the cranberries of Otis L. Carter and C. S. Robbins was so slight that the Committee could hardly decide which was entitled to the second premium. A majority of the Committee, (Mr. Robbins taking no part in the decision), awarded the premium to Mr. Carter, and recommend a gratuity to Mr. Robbins of \$2.00. Milton Dyer also exhibited fine cranberries."

CLASS 5.—*Flowers.*

FIRST DIVISION.

[Committee.—J. E. Gilman, Portland; Mrs. P. De Rocher, Waterville; Edward A. Noyes, Portland.]

153. For the best display of cut flowers, filling not less than 100 vials. B. B. Farnsworth, Portland, \$10; Mrs. Andrew S. Sawyer, Cape Elizabeth, \$8; Albert Dirwanger, Portland, \$6; Mrs. A. B. Strattard, Monroe, \$4. Moses Crafts, Auburn.

154. For the best exhibition of roses, not less than five varieties. William Morton & Son, Allen's Corner, \$5; James Vickery, Portland, \$3.

155. For the best exhibition of dahlias, not less than ten varieties. Albert Dirwanger, \$3; B. B. Farnsworth, \$2. Mrs. Chas. Stanley, Winthrop.

156. Pinks. B. B. Farnsworth, \$3; Albert Dirwanger, \$2. Moses Crafts, James Vickery.

157. Japan Lilies. Wm. Morton & Son, \$5. James Vickery, Joseph A. Dirwanger, Portland.

158. Asters, not less than ten varieties. B. B. Farnsworth, \$3; Joseph A. Dirwanger, \$2. Mrs. Charles Stanley, Moses Crafts, Mrs. A. B. Strattard; Miss L. M. Pope, Manchester; Albert Dirwanger.

159. Pansies. Mrs. Charles Stanley, \$2; Moses Crafts, \$1. Mrs. A. S. Sawyer, Albert Dirwanger.

160. Zinias. B. B. Farnsworth, \$2; Moses Crafts, \$1. Mrs. A. S. Sawyer.

161. Phlox Drummondii. Miss L. M. Pope, \$2; Mrs. A. B. Strattard, \$1. Mrs. C. L. Knight, Deering; Mrs. A. S. Sawyer, Albert Dirwanger, Joseph A. Dirwanger.

162. Stocks. B. B. Farnsworth, \$2; Mrs. Charles Stanley, \$1. Mrs. A. S. Sawyer, Albert Dirwanger.

163. Balsams. (Not awarded.) Moses Crafts, Albert Dirwanger.

164. Crysanthemums. (No entry.)

165. Petunias. Mrs. A. B. Strattard, \$2. Moses Crafts.

166. Gladiolus. Wm. Morton & Son, \$3.

167. Tuberose. (Not awarded.) Mrs. A. B. Strattard.

168. Verbenas. Albert Dirwanger, \$3.

169. Geraniums. James Vickery, \$3.

170. Ferns. James Vickery, \$2.

171. For the best dish of Verbenas. (No entry.)

172. For the best dish of Pansies. Mrs. A. S. Sawyer, \$2. Albert Dirwanger, favorable mention; Mrs. Chas. Stanley, Moses Crafts, Mrs. C. L. Knight, Mrs. A. B. Strattard.

Gratuity:—To Joseph A. Dirwanger, for fine exhibition of ferns, \$5.

William Chipman, Portland, entered Jerusalem Cherry Tree, for exhibition only.

SECOND DIVISION.

[Committee.—Mrs. Wm. S. Tilton, Chelsea; Isaac N. Marshall, New Bedford, Mass.; Mrs. Andrew S. Sawyer, Cape Elizabeth.]

173. For the best exhibition of green house plants. Joseph A. Dirwanger, \$10; James Vickery, \$8; Albert Dirwanger, \$5.

174. For the best pair of parlor bouquets. Joseph A. Dirwanger, \$5; James Vickery, \$3. Mrs. C. L. Knight.

175. For the best pair of wall bouquets. (Not awarded.) Miss Mattie Colcord, Portland; Mrs. Albert Hussey, Deering.

176. For the best pair of hand bouquets. Joseph A. Dirwanger, \$3; James Vickery, \$2.

177. For the best single bouquet. Albert Dirwanger, \$2; Mrs. Chas. Stanley, \$1. Moses Crafts, Mrs. G. B. Sawyer.

178. For the best bouquet of Asters. Miss L. M. Pope, \$2; Mrs. Charles Stanley, \$1. Moses Crafts, Mrs. C. L. Knight.

179. For the best bouquet of Dahlias. (Not awarded.) Mrs. Charles Stanley.

180. For the best floral design. Mrs. Charles Stanley, \$8; Mrs. B. B. Farnsworth, \$5.

181. For the best floral wreath. Albert Dirwanger, \$3; Mrs. G. B. Sawyer, \$2. Mrs. Charles Stanley.

182. For the best floral dinner table decoration. (Not awarded.) Mrs. C. L. Knight, Deering.

183. For the best basket of wild flowers. Mrs. Chas. Stanley, \$2. Miss Mattie Colcord.

184. For the best collection of flower seeds. Mrs. A. B. Strattard, \$3.

185. For the best exhibition of pot plants. Albert Dirwanger, \$8; James Vickery, \$6; Joseph A. Dirwanger, \$4.

186. For the best single pot plant. James Vickery, (Campanula) \$2. Miss L. M. Pope, (Fuchsia) \$1. Miss Nettie Nor-

cross, Deering; Mrs. E. A. Waterhouse, Portland; George H. Cook, Portland; Miss Susan M. Lowe, Portland; Mrs. E. C. Crosby, Portland; T. C. Hersey.

187. For the best hanging basket. James Vickery, \$3; Albert Dirwanger, \$2; same, \$1.

188. For the best exhibition of shrubs in pots, in flower. James Vickery, \$3; Joseph A. Dirwanger, \$2. Marietta C. Weber, Portland.

189. For the best exhibition of dried grasses. Wm. Morton & Son, \$2; Mrs. Chas. Stanley, \$1; Miss Mattie Colcord; Mrs. A. A. Wells, Kennebunkport; Mrs. A. B. Strattard.

190. For the best exhibition of everlasting flowers. William Morton & Son, \$2; B. B. Farnsworth, \$1. Mrs. Chas. Stanley, Moses Crafts; Miss Ella S. Pearson, Vassalboro'; Mrs. A. B. Strattard.

191. For the best Wardian Case. Eldridge L. Cobb, East Deering, \$5.

192. For the best Aquarium, with plants. Henry H. Coe, Portland, \$5; same, \$3.

193. For the best rustic stand, not less than three feet in height, filled with choice plants. James Vickery, \$3.

194. For the best rustic chair (home made.) Joseph Taylor, \$2; same, \$1.

Special premiums, offered by James Vick, Seedsman and Florist, Rochester, N. Y., to amateurs only.

For the best collection of cut flowers. B. B. Farnsworth, \$20; Mrs. A. S. Sawyer, \$10; Moses Crafts, \$5.

A very elaborate collection of everlasting flowers and dried grasses (dyed and undyed) for exhibition and sale, was shown by Mr. C. G. C. Hosley of Weston, Vt.

FARM AND GARDEN CROPS.

195. For the best and most varied collection of farm products, grown by exhibitor. (No entry.)

196. For the best exhibition and greatest variety of potatoes, grown and exhibited by one person, not less than one-half bushel. Milton Dyer, Cape Elizabeth, \$6; M. W. Richardson, Stevens' Plains, \$4.

197. For the best exhibition and greatest variety of vegetables. Andrew S. Sawyer, Cape Elizabeth, \$8; Moses Crafts, \$5. M. W. Richardson, T. C. Hersey, Philip H. Brown.

198. For the best specimen of seed corn. (No entry.)

199. For the best bushel of wheat. A. S. Garland, Carmel, (Lost Nation) \$2.

200. For the best bushel of buckwheat. (No entry.)

201. For the best bushel of rye. (No entry.)

202. For the best bushel of beans, new. A. S. Garland, \$3; Joseph Bachelder, Yarmouth, \$2. Moses Crafts.

203-207. Peas, Red Clover seed, Timothy seed, Red-top seed, and Alsike Clover seed. (No entries.)

208. For the best collection of garden seeds. Mrs. A. B. Strattard, \$3.

209. For the best ten blood beets. J. W. Merrill, Portland, (City Farm) \$2. Moses Crafts, Philip H. Brown.

210. For the best pumpkins. Moses Crafts, \$1. J. J. Gilbert, Deering.

211. Cauliflowers (No entry.)

212. For the best Cabbages. Andrew S. Sawyer, (three varieties) \$2; T. C. Hersey, \$1.

213. For the best Turnip Beets. Moses Crafts, \$2. S. M. Rideout, Cumberland Center; C. B. Lakin, Augusta; T. C. Hersey, Andrew S. Sawyer, Mrs. A. B. Strattard.

214. For the best carrots. Moses Crafts, (three varieties) \$2; J. W. Merrill, \$1. T. C. Hersey, Andrew S. Sawyer; J. B. Brown, Portland; Mrs. A. B. Strattard, P. H. Brown.

215. For the best Parsnips. Moses Crafts, \$2; A. S. Sawyer, \$1. T. C. Hersey, Mrs. A. B. Strattard, Philip H. Brown.

216. For the best Ruta Bagas. J. W. Merrill, \$2; C. P. Mattocks, Portland, \$1; Mrs. A. B. Strattard.

217. For the best Sugar Beets. Moses Crafts, \$2.

218. For the best English or strap-leaved Turnips. T. C. Hersey, \$1.

219. For the best Lane's Improved Sugar Beets. M. W. Richardson, \$2; Moses Crafts, \$1. Kendall & Whitney, Portland.

220. For the best Celery. John B. Brown, \$1. T. C. Hersey, A. S. Sawyer, P. H. Brown, M. Crafts.

221. For the best Peppers. P. H. Brown, \$1. J. B. Brown.

222. For the best half bushel of Onions. J. W. Merrill, \$3; A. S. Sawyer, \$2. Geo M. Stevens, Stevens' Plains.

223. For the best Tomatoes. Moses Crafts, \$1. S. R. Sweetser, A. S. Sawyer (four varieties), P. H. Brown.

224. For the best Marrow Squash. C. B. Lakin, \$2; J. W. Merrill, \$1. M. Crafts, T. C. Hersey, A. S. Sawyer; William T. Rolfe, Portland.

225. For the best Hubbard Squash. M. W. Richardson, \$2; T. C. Hersey, \$1. M. Crafts, Wm. T. Rolfe, J. W. Merrill, Mrs. A. B. Strattard.

226. For the largest squash. Moses Crafts, \$2. George A. Bailey, West Gray.

227. For the best Turban squashes. C. B. Lakin, \$2; Elder M. Jordan, \$1; S. R. Sweetser, gratuity, \$2. M. Crafts, A. S. Sawyer.

228. For the best Marblehead squashes. (No entry.)

229. For the largest pumpkin. M. Crafts, \$1.

230. For the best watermelons. M. Crafts, \$1.

231. For the best Citron melons. (No entry.)

232. For the best sweet corn. M. Crafts, \$2; Wm. T. Rolfe, \$1. T. C. Hersey, A. S. Sawyer.

233. For the best single variety of potatoes. A. S. Sawyer, (Early Rose), \$1. M. W. Richardson, (Early Rose and Brownell's

Beauty), C. B. Lakin (Garnet Chili), Wm. T. Rolfe (Garnet Chili), P. H. Brown (Early Rose and another variety), Moses H. Hussey, North Berwick, (Snow-flake).

Gratuity, to A. S. Sweetser, for Butman squash, \$2.

Other entries, of articles not embraced in the premium list, were made as follows: Kendall & Whitney, Allen's beets; A. S. Sawyer, Egyptian beets, onion sets; William T. Rolfe, beets; J. W. Merrill, mangolds; J. B. Brown, London flag leeks, green curled Endive; P. H. Brown, salsify, mangolds, egg plants; William L. Pool, Cavendish Tobacco plant.

STATEMENTS BY EXHIBITORS OF CRANBERRIES.

I. By SEWARD DILL, Phillips. "These cranberries were grown on a muck bog—the turf taken off and a light coat of sand spread on the muck; then trenches made, three inches deep, two and a half feet apart. The vines were placed along the trenches and set by hand; after this another light coat of sand spread. Varieties, 'Bugle' and 'Bell.' Vines obtained from Hancock county, this State, and from Minnesota."

II. By OTIS L. CARTER, Etna. "The land was cleared of timber, then ditched,—the vines set out and the land sanded four inches deep. Flowed in winter."

III. By C. S. ROBBINS, Winthrop. "The cranberries that I exhibit were grown on one-eighth of an acre of bog or muck soil, prepared six years ago, by draining and removing turf, and planting the vines in rows three feet apart. After cultivating two years, water was made to stand on the plat by closing the drain in the fall and opening it in spring. In a portion of the plat the vines have subdued the grass and are loaded with fruit, but where the water has stood deepest in winter, a coarse, rank grass has subdued the vines. The water is supplied by rains by means of surface drainage,—no brook or spring in the lot. This is the first year that my crop can be reckoned by *bushels*, with the promise of yearly increase."

IV. By MILTON DYER, Cape Elizabeth. "The land is a natural basin on a high ridge, which is filled with water in the fall and spring. In most seasons it would be dry enough for corn after the 25th of May. The land was ploughed in September, about twelve years ago, harrowed, and vines set out, three feet by two feet, with a small quantity of earth attached to the roots. On a part of this the vines are a complete mass, ten inches thick. Shall have to clear them out. The rest have done quite well in favorable years."

PUBLIC MEETINGS

were held on each evening of the exhibition except the last. That of Wednesday evening was conducted by the Pomological Society, but the attendance was meagre. An able and interesting address was delivered by Hon. Geo. T. Davis of Portland,—abounding in anecdotes and illustrations, and to which no report can do justice, hence none is attempted. Remarks of a practical character were made by Joseph Taylor of Belgrade, and Hon. G. W. Woodman of Portland, also by the President and Secretary, the latter giving a brief account of the session of the American Pomological Society at Chicago.

The annual meeting of the Society for the transaction of business, was held on Thursday afternoon, Sept. 23d, and was well attended. Officers were elected for the ensuing year, (as elsewhere named), and the affairs and prospects of the Society fully discussed. Other business was postponed to the Winter Meeting.

On Tuesday evening an address was delivered before the associated societies, of special interest to horticulturists, and which is herewith presented in full.

DESTRUCTIVE INSECTS — THEIR HABITS AND THE MEANS OF PREVENTING THEIR DEPREDATIONS.

A Lecture delivered before the several State societies at the joint exhibition in Portland, September 21, 1875,

BY PROF. C. H. FERNALD, OF THE STATE AGRICULTURAL COLLEGE, ORONO.

Mr. President:—It has occurred to me that I could best occupy your time for awhile this evening, by describing the life history of some of our more common and destructive insects, and giving what at the present time, seem to be the best methods of destroying, or holding them in check. Among the most common of our injurious insects is the apple-tree or tent-caterpillar, (*Clisiocampa Americana*, Harris). The eggs of the moth are laid in July or August, in oval rings around the smaller twigs. These rings or bands contain about three hundred eggs, which are covered with a thick coating of glutinous matter, which probably serves as a protection against the cold weather. The eggs remain in this condition all winter, and hatch out in the spring about the time the buds of the tree begin to burst and the leaves to grow. They usually hatch in wet or moist weather, as the moisture softens the

glutinous covering which the young feed upon till they gain sufficient strength to make a move, when they crawl down the branch, spinning a fine silken thread from the spinneret in the mouth. Having arrived at a fork of a limb they stop, and erect a kind of tent for their future residence, by crawling around the spot and spinning their threads in every direction.

As the caterpillars grow larger the original tent becomes too small for them all, and large numbers of them, as they return from their foraging expeditions, rest side by side upon the outside of the tent and completely cover it over, while others coming in wander about and over the sleeping ones, looking for some place of repose, still spinning their silken threads, till at last a complete scaffolding is formed above those first in, and in this way another story is added to the tent.

In all cases where I have raised tent caterpillars in confinement, they have taken two meals a day, provided the weather was clear and warm, one about the middle of the forenoon the other about the middle of the afternoon. Some, however, have stated that they take a third meal sometime in the night, but I think this rather doubtful. From the observations of others, and from my own experiments, I am led to conclude that each caterpillar will consume on an average about two apple leaves a day, and as each nest contains about three hundred caterpillars, there would be six hundred leaves destroyed each day by the inhabitants of a single tent, a drain which no tree can sustain for any considerable length of time without great injury; and when there are several tents upon the same tree the injury is so much the more increased. After the caterpillars have attained their full growth, they lose their social habits, and wander off to find suitable places in which to spin up their cocoons, which are oblong-oval in form, and of a light yellowish white color, and attached horizontally to the under side of fence rails, or other protected places. They remain in these cocoons about three weeks, after which the perfect insects come out, the sexes pair, and the females lay their eggs upon the twigs of the trees, when the work of that generation is done, and the moths very soon die.

There are three measures which I can confidently recommend whereby these insects may be held in check, and the trees saved from ruin: 1. Burn all the cocoons which may be found, except such as contain other insects as parasites. Preserve these carefully, and allow the parasites to mature and escape that they may

aid in the work of destruction. 2. Search the trees carefully during the season when they are bare, for the clusters of eggs, and when found cut them off and burn them. Do not be satisfied with anything short of burning. 3. As soon as any tents are observed in the orchard they should be destroyed, which may be readily and effectually done by ascending the trees, and with the hand protected by a mitten or glove seize the tent and crush it with its entire contents. This may seem rather undesirable work, and it must be acknowledged that one feels better after it is done than while doing it, yet this is an effectual mode. It should be observed, however, that since the caterpillars are quite regular in taking their meals in the middle of the forenoon and afternoon, their tents should be destroyed only in the morning or evening, or possibly in the middle of the day, when the caterpillars are all in the tent, though if my experiments upon them in confinement are to be trusted, I cannot recommend the middle of the day as there may be many stragglers away from the tent if the weather is warm and clear. Every tent, wherever found, whether on orchard or forest trees, should be destroyed. It should be remembered that this insect is a native American, and before the general introduction of the apple it probably fed, as it frequently does now, upon the wild black cherry (*Prunus Serotina*, Ehr.), which it is said to prefer, also on the wild red cherry (*Prunus Pennsylvanica*, L.), the choke-cherry (*Prunus Virginiana*, L.), the shadbush (*Amelanchier Canadensis*, T. and G.), and doubtless upon other species of the same family, but I have observed them upon the above named species in the forest.

The next insect to which I call your attention is the Forest tent caterpillar (*Clisiocampa sylvatica*, Harris). This insect which has been so destructive in some parts of the State, not only to fruit trees, but also to many trees of the forest during the past two years, is very closely related to the common tent caterpillar which I have just described, differing from it only in species. Your President sent me specimens of this caterpillar last summer, which fed awhile in confinement, and finally spun their cocoons and went into the pupa state, some of them during the last days in June and the first of July, the last of the lot on the 4th of July; and as I have raised these insects each year for several years, and they have invariably gone into the pupa state at about that time, we may conclude without much doubt that in this State they stop feeding and go into the pupa state during the last of

June and the first of July. These insects remain in this state about fifteen days, when the perfect insect or moth comes out, the sexes pair, and the females lay their eggs, about 400 in number, in belts around the twigs of the trees, in the same manner as the common tent caterpillar. The egg masses may be distinguished from those of the common tent caterpillar by their forming a complete cylinder around the twig, and holding its full size from one end to the other, appearing, as Riley says, of a uniform diameter and docked off squarely at each end, while the egg masses of the *other* are oval rings rounded at each end. The eggs remain on the twigs during the fall and winter, and hatch out from the first to the middle of May, when the young larvæ go on their foraging expeditions up to the time when they are fully grown, when they wander off in every direction seeking some place of concealment, where they spin their cocoons, which differ somewhat from those of the common tent caterpillars, in having a loose silken covering outside of the oval cocoon. They do not always form this outside loose covering, in which case they very closely resemble the cocoons of the common tent caterpillar. I can find no evidence that there is more than one brood of these insects in a year, but every proof that they are one brooded. I have been collecting night flying moths for some time, both at light and at sugar, and those insects which are known to be one, two or several brooded, appear and have been captured at one, or at several times during the season, according as there is one or more broods, but I have never captured the moth of a forest tent caterpillar except at the time corresponding to that when they came out of the cocoons in confinement, and I believe this is the experience of entomologists who have collected the night flying moths for a series of years. We must conclude, then, that when they are found in a tree after the egg masses have all been removed, and the tree once cleared of the caterpillars, they have left some other tree which they have stripped, and ascended the one in question by means of the trunk, which they have frequently been observed to do. This may easily be prevented by putting tar or printer's ink in a belt around the trunk of the tree.

The habits of this insect in the larval state are considerably different from those of the apple tree tent-caterpillar, in this, that while they spin a silken thread the same as the other, they do not form a tent between the branches, since they do not rest in that place, but upon the smooth side of the trunk or branch, and thus

their thread lies beneath them, and does not make any show. I learn from your President that they feed by night, a fact I have never observed myself, since I have found but few thus far, and have reared them in dark boxes where they would not be likely to observe their true feeding habits. This insect, like many others, seems to be extremely abundant for a year or two at a time in one locality, and then it becomes very scarce for some time, when it occurs in great abundance in some other place for a time. In 1867 they were reported to have done extensive damages to the orchards and forests in Belfast and vicinity. In 1863 they did an immense amount of damage to both fruit and forest trees in Monmouth, and though they went by the name of army worms there, at that time, since they went across the town in a belt stripping the trees in their route, yet I am convinced that they were not the true army worm (*Leucania unipuncta*, Haw.), but rather the forest tent-caterpillar. They have occurred in great abundance for a year or two at a time in various localities in other States, as far back as we know anything of them, but as they remain in such abundance only for a year or two, it is probable that their parasitic insect enemies multiply much more rapidly than they do themselves, and thus about the second or third year a very large majority of them are attacked by the parasites, and they are so reduced in numbers as to be very rare for a number of years, when their parasites also become greatly decreased in numbers, because of the absence of suitable insects to prey upon; after which the caterpillars are likely to increase again as before. I would recommend to the people living in the infested region, to search all the trees they desire to preserve, for the eggs, which should be cut off and burned, and to put a belt of tarred paper or canvas around the trunks early next summer to prevent the ascent of the caterpillars.

THE APPLE TREE BORER (*Saperda bivitata*, Say).

This native American insect has doubtless for ages infested the wild crab, mountain ash, and other related trees in this country. The beetle comes out of the trunk of the tree in its perfect state, in June, making its escape in the night, during which time only does it fly from tree to tree in search of companions and food. During the daytime it remains concealed among the leaves of the tree upon which it feeds. I once found one in the daytime feeding upon the bark of a wild shrub on the top of Dog Mountain, Mt. Desert Island. It gave no signs of leaving when I disturbed it,

but continued gnawing the bark, forming a small girdle around the branch upon which it was feeding.

The female lays her eggs mostly on the bark at the foot of the tree, and the young hatch and commence gnawing into the bark within a fortnight afterwards. They invariably live for the first year in the sapwood and bark. The hole by which the young enter is so small that it soon fills up. In the case of young trees, where the borer works along under the bark, the organic connection of the bark has been destroyed, and it turns dark, sometimes shrinking so as to form a crack from which the castings fall out, and thus the borer may be detected.

This insect remains in the tree three years, when it works its way to the bark, goes into the pupa state, where it remains some four weeks, after which it escapes from the tree. There is, perhaps, no surer and better mode of destroying the borer after it has once entered the tree, than to dig it out with a sharp knife, or to run a wire into the holes and pierce the borer; but to prevent the beetles from laying their eggs upon the trunks of the trees, both Dr. Fitch, and Prof. Riley, the accomplished entomologist of Missouri, very highly recommend that soap be applied to the trunks of the trees, from the limbs down close to the ground. Either soft soap may be used, or common bar soap, rubbed on. It would be well, also, to put a piece of soap in the principal crotch of the tree, that it may be washed down over the trunk by the rains. The application should be made in May, or before the beetles are ready to lay their eggs.

THE CODLING MOTH OR APPLE WORM, (*Carpocapsa pomonella*, L.)

This insect is a native of the old world, but is now, I think, to be found in all parts of the world where apples are raised. It is mostly two brooded, the second brood hibernating in their snug little silken cocoons, under some fragment of bark or other shelter. In the latter part of June and the first of July, they escape from their cocoons, and after pairing the female flits about among the apple trees, during the night only, laying an egg in the blossom end of one apple after another. In from four to ten days the egg hatches, and the worm eats its way into the apple, where it remains from twenty-five to thirty days, becoming fully matured, when it bores its way out through the side and escapes, either before the fall of the apple or immediately after, and makes its way to some crevice in the bark of the tree or other sheltered

place, where it spins its cocoon, and in which it remains from twelve to eighteen days, after which it comes out a perfect moth, and having paired, the female lays her eggs on the apples at a later period, giving rise to the worms in the apples of fall and winter.

The fruit should be gathered up immediately after it falls, before the worms leave it to find a retreat in which to spin their cocoons, and such immediate use made of the apples as would destroy the worms. Some recommend allowing the hogs to run in the orchard to eat the apples as soon as they fall. This cannot be wholly relied upon, as some of the worms leave the apples before they fall, therefore it is advisable to scrape off all the rough portions of the bark which would harbor these insects, and burn them to destroy all the cocoons, also to keep the ground under the trees smooth and clear of all rubbish under which the worms might form their cocoons; and before any of the apples fall from the trees, bands of hay, straw or cloth should be bound around the trunks of the trees, so that the worms seeking a place of concealment may find none till they arrive at the bands, where they will be more than likely to take up their quarters. These bands should be removed every week or ten days at the most, and put into scalding water to destroy the cocoons. The bands should be kept on the trees till all the apples are gathered. In the spring all the boxes or barrels in which apples have been stored should be carefully examined for the cocoons of those worms which were in the apples when they were gathered. It may seem a great task to do all this, but when I remind you that each female that escapes in the spring lays from two hundred to three hundred eggs, and thus spoils as many apples, you will agree with me, that the destruction of these cocoons becomes of prime importance.

THE PLUM CURCULIO, (*Conotrachelus nenuphar*, Herbst.)

This little beetle makes a crescent-shaped slit in the side of the young fruit, by means of the snout with which it is provided, raising the convex side and depositing an egg under it. Each female has from fifty to one hundred eggs, and deposits from five to ten a day; her activity varying with the temperature. The egg hatches out in a short time, and the larva eats in to the stone, when the fruit falls from the tree, and the larva escapes, making its way into the ground, where it undergoes its transformations. After the beetles come from the ground, they feed on fruit as long as that lasts, gouging holes into it with their snouts. After the fruit is

gone, they feed on the leaves of the trees, and when nothing else is to be had they feed on the bark of twigs till cold weather comes on, when they go into winter quarters, hibernating, according to Riley, under all sorts of shelter in the woods, generally near the surface of the ground. In the spring they commence active operations as soon as warm weather fairly sets in, and as soon as the plums are a little grown the females lay their eggs for another generation. It is recommended to spread a large sheet of white cloth under the tree, and give it a sudden jar, as striking it upon the end of a limb which has been sawn off; the curculios will fall upon the sheet and may be collected and destroyed. Morning and evening are the best times to jar the trees. An additional recommendation is, to spread small pieces of boards about under the trees for the beetles to hide under during the day, and by turning these over they may be found and destroyed. It has occurred to me, that since the larva has to work its way into the ground to undergo its transformations, where the ground is clear it might be rolled and otherwise compacted so that the curculio could not readily work itself down, and thus it might perish upon the ground from exposure to the sun.

There is another insect which is doing a great deal of damage in some parts of our State, if not all over it, and yet I have so far heard no complaint about it, so that I have been led to suspect that many mistake it for the common or the forest tent caterpillar. The insect to which I refer is the fall web-worm (*Hyphantria texlor*, Harris). This is a small white moth which lays her eggs upon a leaf near the end of a branch, during the last of July. The eggs hatch out, and the young enclose the entire end of the branch in their web, and feed only upon the pulpy part of the leaf, or the parenchyma, under the tent, extending the tent or web to enclose more leaves as they need them to feed upon. After the larvæ are fully grown they descend from the trees, work themselves down into the ground, where they go into the pupa state and pass the winter. This insect does not seem to be at all particular about its diet, for you may find the webs on almost every kind of a deciduous tree, so that forest and fruit trees alike suffer from its depredations. The fall web-worm is readily destroyed by cutting off the branch upon which the web is situated and burning it, or treading it under foot so as to crush all the worms. If, however, they are upon the limb of a tree which you do not wish to prune so much, they may be crushed in the web after the manner of the

common tent caterpillar, and the work may be done at any time of day, as they never wander out of their webs save when they leave them to go into the ground to spend the winter.

Another insect which has been, and is still making sad work with our gooseberry and currant bushes, is the currant worm, (*Nematus ventricosus*, Klug). The perfect insect lays her eggs on the underside of the leaves along by the side of the larger veins, sometimes, however, they are deposited in irregular clusters. In about a week the young hatch out, and commence feeding, and continue their work till the bushes are completely stripped of their leaves, or till they are fully grown, when they go down into the ground, form a little black pupa in which they pass that state, after which the perfect insects emerge from the ground and the females lay their eggs for a second brood, which pass the winter in the pupa state in the ground. I know of no better remedy for these insects than the white helebore, (*Veratrum album*) and think if it has not lost its strength it may be regarded as a safe and valuable remedy. It is probably better to mix flour with the helebore in the proportion of three parts of flour to one of helebore.

Some seventeen years ago the European cabbage butterfly obtained a passage to this country, landing at Quebec, from which place it has spread far and wide over the country, and multiplied to such an alarming extent that in some localities the raising of cabbages has been given up entirely. Very many artificial remedies have been suggested, some of which may be of some advantage, but the greatest check I now know of is from a little parasitic insect belonging to the Hymenoptera, and long ago named by Linneus, *Pteromalus puparum*. This little pigmy friend deposits her eggs, some forty or fifty, in the pupa of the cabbage butterfly, and the young feed on the substance of the pupa and thus destroy its life. If from each pupa that is infested by these parasites, there are forty hatched to prey upon the next lot of butterflies, you will see what a powerful ally we have in this little insect. In a collection of thirty pupas which I made last spring, there was but one which was not infested by the parasite, yet I am led to believe that this little friend is not yet to be found in every part of the State, and that it may be able to distribute itself wherever the butterflies have gone, and hold them in check, is devoutly to be wished.

In some parts of the State the onion fly, (*Anthomyia ceparum*, L.) has been doing a great amount of damage. I can offer no

remedy for this insect, unless it be in the mode of planting the onions. The fly lays her eggs just above the surface of the ground, and the maggots which hatch from these work their way down to the root upon which they feed till they consume all save the outer skin, when they leave that onion, and work their way through the ground to the next, each maggot requiring several onions to furnish all its needs; and, if the onions are grown in a drill, so as to touch or nearly touch each other, the maggots find but little difficulty in working through the ground from one onion to another, but if they are planted in hills, or some distance from each other, the chances of their getting from one onion to another are very much against them, for they have no feet and can only make their way along through the soil very slowly.

The army worm, (*Leucania unipuncta*, Haw.) not many years ago was very abundant in some parts of the State, doing an immense amount of damage; but its foes so multiplied that it was greatly reduced in numbers, and is indeed quite a rarity in some sections. This year we hear of it again in various quarters, and fear that another year may bring news of the devastations of this insect equal to that of 1861. It is to be hoped, however, that even this year the parasites have been so abundant as to check the army worm, so that we may hear nothing from it next year.

You may possibly have a desire that I should, before closing, say something of the Colorado potato beetle, (*Doryphora decemlineata*, Say) which has been making such havoc in the western potato fields, and at whose rapid approach we are looking with dismay. Beetles of almost every description have been sent to me during the past season, to know whether they were the genuine Colorado potato beetle. In reply I have sent to persons who I thought would inform their friends, preserved specimens of this beetle, and also gave samples to the members of my class in entomology, with instructions to show them to the farmers wherever they went, and inform those not already posted, of the life history and best means of checking the ravages of this insect when it makes its appearance among us. I can hardly tell to what point in New England the beetle has arrived this season, but probably it will make its appearance in western Maine next summer. We are as yet obliged to refer to the writings of others for the history of this insect which bids fair very soon to give us every opportunity for investigating its habits ourselves. From the reports of the Western and Canadian entomologists, we learn that the eggs,

which are of a deep orange color, are deposited on the underside of the leaves of the potato, in patches of thirty or forty, and hatch in about a week, when they begin their work of destruction. In about a fortnight, the larvæ attain their full growth, cease feeding, and make their way down into the ground, where they pass the pupa state, from which, in about ten days, the perfect beetles appear. In about seven days after maturity the beetles pair, and the females lay a batch of eggs each day for about forty days. Each female was estimated by Dr. Shimer of Illinois, to lay, on an average, about seven hundred eggs. In the western States, there are three broods a year, the last brood remaining under the ground all winter, and coming out in the spring as perfect beetles. If we take Dr. Shimer's estimates of seven hundred eggs from each female, and three broods a year, and supposing one-third of the eggs to produce females which in turn would yield each seven hundred eggs, we should obtain in the course of one season from one pair of insects, the enormous number of over thirty-eight millions of larvæ, and when we consider how voracious they are, we may well tremble for our potato crops, when once this pest becomes fairly established among us. There is nothing for us to do now, so far as I know, but to provide ourselves with the usual remedy, Paris-green, and wage war with this prolific foe when he makes his advent among our potatoes. There are various ways of applying the Paris-green, perhaps the most approved is to dust it on the vines when they are wet with dew in the morning. As the Paris-green is very poisonous, it should be used with the utmost care. For dusting the vines it should be intimately mixed with ten to twelve parts of flour. It may also be applied by means of a sprinkler, using one table-spoonful of Paris-green to one pailful of water. It must be frequently stirred up else the Paris-green will sink to the bottom of the pail, as it is not soluble in water.

It has been given as the opinion of an eminent entomologist, that so long as nature alone is operating, it very rarely, or perhaps never occurs, that vegetation is extensively damaged by insects or other animals. But when the natural relations are altered by man, as the clearing away of forests, the extending of the culture of certain crops over wide areas, even into the regions occupied by certain noxious insects, these insects are multiplied to excess, and extended far beyond their original habitats. The Colorado potato beetle is an illustration of this. This insect occu-

pied a restricted region on the eastern slope of the Rocky Mountains, fed upon the *Solanum rostratum*, an indigenous plant closely related to our common potato, and probably would always have remained in that region, had not man extended the culture of the potato over the entire country, even up to the region of the insect in question. The result is what was long ago predicted by the Western entomologists, and it is to-day not only a question of individual interest, but one of State and national importance. There can be no doubt that if the national government had at first spent, in a proper manner, a very small percentage of the money that has been lost by the devastations of the Colorado potato beetle, we should not now, and perhaps never should be looking with dismay at the rapid approach of this wretched insect.

But there are thousands of insects preying upon the various crops that our farmers raise, which are not seen, and we may never suspect that the injury is caused by insects at all. The plants may not be wholly destroyed, only weakened so that we get but a percentage of the crop we should obtain. Some insidious little insects may be swarming by millions over the plants in question, sucking the very life sap from them, and leaving for us only puny, sickly plants, where we should have strong, vigorous, healthy ones. All this may be done by insects so small as not to attract our attention, or it may be done by some insects which work only by night, as the cut-worms, of which there are a great many species preying upon as many different species of plants.

It has been estimated that there are upon this globe from 200,000 to 500,000 different species of insects, and an almost innumerable number of individuals of many of these species; that a large percentage of these are vegetable feeders, preying upon our crops, our fruits, and our trees; that these insects in some years multiply to an alarming extent, destroying all before them.

Mr. B. D. Walsh, more than ten years ago, from the best possible data accessible, estimated that the annual amount of damage done by insects in the United States, could not be less than \$300,000,000. He also estimated that when the Colorado potato beetle had reached the Atlantic it would then cause a loss on potatoes alone to the amount of from \$25,000,000 to \$30,000,000.

The grasshoppers in the West have recently, as stated by Dr. LeConte, caused a destruction of food to the amount of from 40 to \$50,000,000. These estimates will give us approximately some \$375,000,000 for the annual damage done by insects in the United

States at the present time. Now I hardly know what proportion of this loss occurs in Maine, but let us suppose that one hundredth part of the above amount be the proportion of loss for Maine after the Colorado potato beetle becomes well established in our potato fields, and I think no one can regard this too large. This gives us \$3,750,000 for the loss caused by insects in Maine, every year. Now if a very small percentage of this sum, say one per cent., could be saved to our farmers, it would amount to the sum of \$37,500 every year, a sum which would vastly more than pay for all the experiments and entomological operations that the most enthusiastic could be likely to suggest.

I think you will agree with me in the belief, that if only what is already known about our insects, and is at present scattered through various reports and proceedings of scientific societies, not generally accessible to our farmers, be collected and compiled by some competent person, and distributed so as to be in the hands of every farmer in Maine, he would possess the information whereby he might save *more* than one per cent. of his share of this great waste. If, instead of this plan, you employ one of our best entomologists, who shall not only perform the above mentioned labor, but who shall make investigations into the habits and economy of such of our insects as are not well known, and are doing great damage, learning what agents may be used for their destruction, and what parasitic insects prey on them in regions where they may be better known, and, if feasible, introduce those parasites into the infested regions, and in fact devoting his entire time to the best interests of economic entomology in the State, there is not the shadow of a doubt in my mind that the loss caused by insects at present would be reduced at least five per cent. But, lest you may regard me extravagant in this estimate, I will place it far below what my own honest convictions tell me, and set it at two per cent., and this even will amount to the snug little sum of \$75,000 every year.

I therefore give it as my opinion, that it would be the very best economy for the State to employ an entomologist of the highest qualifications, that he be paid such a salary as will induce him to come here and remain with us permanently, that his reports be published, with such quality and quantity of illustrations as he may desire, and that some scheme be devised whereby a copy of each of his reports may fall into the hands of every farmer and fruit-grower in the entire State. Permit me here to say, that it is

my firm conviction that many of the States employing entomologists fail to derive the advantage they might from the labors of those men, by pursuing the very unwise economy of issuing a very small number of their reports, and then so distributing them that very few even of those fall into the hands of the agricultural classes for which they were designed.

Some of our most destructive insects have been imported from the other side of the Atlantic, and in those countries have parasites preying upon them which are not as yet in this country. The cabbage butterfly is one of those European insects, and one, at least, of its European parasites has already found its way into this country but has not as yet distributed itself everywhere the butterfly has gone. It would clearly be the duty of a State entomologist to investigate this matter, and import such parasites as prey upon these insects in the old world, but have not as yet reached this country, and distribute those already here into parts where they have not yet gone. Plainly this is work which no novice can undertake, and should not be attempted save by a person accomplished in this department of natural history.

It is very questionable whether the remedies now recommended for many of the insects, are the best we could have; and there are many insects for which we have none at all. Can it be possible that nothing new can be learned in this direction? We should be loth to admit such an idea. But who shall carry on these investigations? Who shall spend his time and money in this field of research, for time and money are necessities in research? Shall we leave it to blind chance to hit upon some destructive agent which shall annihilate the whole race of cabbage butterflies? Shall we leave it to those interested in agricultural pursuits to fight these seen and unseen hosts of insects as best they may, and we pay the increased prices which their products cost because of the destruction of these insect foes? Surely this is not good policy. There should be some one who is paid to devote his time to this business, and is furnished with the means for carrying on these investigations. Besides recommending that a State entomologist be employed, I would earnestly recommend that you cultivate in your boys a spirit of inquiry concerning the common insects around you. If your boy will take some ordinary box with glass upon one side so as to admit the sunlight, and will put into the box a small branch of an apple tree with a tent caterpillar's nest on it, and feed it with fresh leaves each day, noting all the changes

they pass through, the different moults, the time, mode and circumstances of spinning their cocoons, the time they remain in their several stages, and mark well the differences between the sexes of the perfect insect, and will preserve samples of these in all their stages for future comparison, he will have learned one of the most valuable of lessons—how to observe. If he will carry as many as possible of the common insects through the round of life, he will have his eyes opened to wonders he never before dreamed of, and a spirit of inquiry will be awakened which will extend to other things besides insects. In his work on insects he may require assistance, and I can recommend no one book more highly than “Harris’ Insects Injurious to Vegetation.” With this a good beginning may be made in this work. If all the sons of farmers would pursue this course, I should have no fears for the subject of entomology in the future.

PROCEEDINGS OF THE WINTER MEETING.

The third Annual Winter Meeting of the Society was held at the Common Council Room in the City Building, in Lewiston, commencing on Tuesday, February 22, 1876, at 1 o'clock P. M., and was designed to embrace a General Fruit Growers' Convention, and an Exhibition of Winter Fruit for study and comparison.

All members of the Society, and others interested in its objects, either as Fruit Growers, Horticulturists or Florists—ladies included—were invited to be present. It was hoped that the appointment of this meeting at the centre of one of the best fruit-growing sections of the State, would induce a large attendance, but the result proved otherwise.

The programme of the meeting embraced the following subjects:

TUESDAY, FEBRUARY 22.

AFTERNOON SESSION.

1st. Annual Address by the President, Z. A. Gilbert, of East Turner.

2d. Orcharding as a Business, by Alfred Smith, of Monmouth.

3d. General Discussion of the same subject.

EVENING SESSION.

1st. Cherries in Maine, by Granville Fernald, of Harrison.

2d. Small Fruits, by Lyman F. Abbott, of Wilton.

3d. Discussion on "Small Fruits," and revision of the Society's catalogue of the same.

WEDNESDAY, FEBRUARY 23.

MORNING SESSION.

1st. Discussion on Pear Culture in Maine. To be opened by Henry McLaughlin, of Bangor; embracing the revision of the catalogue of pears.

2d. Report of the Corresponding Secretary, Dr. J. C. Weston, of Bangor.

AFTERNOON SESSION.

1st. Revision of the Society's catalogue of apples, and other fruits not previously considered.

2d. Preparation of Select List of Fruits for Amateur Cultivators.

EVENING SESSION.

Business Meeting of the Society. Reports of officers, and other business postponed from the Annual Meeting in September. Re-arrangement of Standing Committees, and consultation respecting the operations of the Society for the ensuing year.

In the circular notices which were issued, calling the meeting, persons attending were requested to prepare and present concise reports on the Orcharding and Nursery business of the State for 1875, embracing statistics of the extent and quality of production, and observations on the various causes of local or general success or failure, especially the climatic and atmospheric conditions and the depredations of insects,—in order to enable the Society to make a permanent record of the same; but the time occupied by the meeting proved inadequate to the full consideration of the other topics assigned, and hence these reports were not given, except so far as they are incidentally embraced in the papers and discussions herewith presented. [Attention is here called to this subject for the purpose of requesting members and others to make careful notes and observations during the ensuing year, for future presentation.]

The meeting was called to order at the time and place designated, with the following introductory remarks, by the President:

Gentlemen, members of the Maine State Pomological Society:

We meet here on this occasion for the purpose of transacting some routine business, and of considering such topics as the Society deem important to the general interest of horticulture in the State. We have selected this locality as being convenient of access, and as a city renowned somewhat for its liberality in furnishing accommodations for this and similar purposes. Our Society is not popular among the general public—at least, we do not draw together large numbers of people at our winter meetings

or at the other meetings of the Society ; but we hope that through our exertions a deeper interest may be aroused in these industries throughout the State. The very fact that so little interest is manifested, and so few people attend on the deliberations of the Society, is proof of the necessity of the existence of a society in Maine to work for the interest of horticulture in general and pomology in particular.

As a citizen of Androscoggin County, let me say, that we who are interested in its advancement are glad to have such meetings held among us, and glad to welcome this Society here, though so few individuals present themselves. The Society has received the encouragement of the press of this city, the papers printed here having circulated the notice of the meeting and called attention to its importance in their editorial columns. We have individuals in this county, and a goodly number of them, who engage extensively in the business of fruit-growing, but do not attend such meetings as this. This, to individuals so interested in pomology that they cannot keep away from the meetings, seems almost unaccountable ; but it is easy to see the reason—these men have engaged in the business, not from an outright love of it, but to make money. We hope before the close of this meeting, that we may see, as we doubtless shall, others of the pomologists of the State and vicinity present. We publish annually a report of the transactions of our Society, which goes out among the fruit growers of the State, and we hope exerts a beneficial influence. I do not wish to take further time in these preliminary remarks but would like to hear from the Hon. Nelson Ham, of Lewiston, a prominent farmer, and Master of the State Grange, and also interested in this and similar societies.

Mr. HAM. Mr. President. I can only say with you that I am happy to welcome the Society here, and that I doubt not that your meeting will awaken a new interest in fruit culture ; that it will call the attention of many of us to this subject, who do not know how to deal with it, or who do not do as well as we know, and have therefore left undone many things that we ought to have done. It has been the fortune or misfortune of many of us to have old orchards which our fathers planted, and we supposed until recently that these trees would endure for all time, until we learned too late that they had passed their day, and we had neglected to supply others to take their places.

I have seen the necessity of fruit culture, but it is only within a few years that I have been so situated that I could give that attention to it that its importance demands. I believe that one principal thing that should be attended to by every farmer and fruit culturist is, to plant some fruit trees every year, as regularly as they plant their annual crops. It is in my opinion the only way they can attain to success in growing fruit. I think this branch of industry has been more fully developed here than in most other parts of the State, and that there are parties in this locality whose orchards can hardly be surpassed, and I believe, too, that there is an increased interest in pomology throughout the State, and that that attention which will secure success is very generally given to it. I refer in this, particularly, to that attention to secure trees that are especially adapted to the locality. It has been too often the case that trees have been set out regardless of their adaptation to our climate and soil, and while I believe there are many varieties adapted to our wants, and which we can grow successfully, it is none the less true that of most of the trees which have been set out and have failed, failure has been caused by this want of adaptation to climate and soil. In order to secure success in this direction, knowledge, attention and much experience will be needed before final success is attained. We should not be discouraged when we see what has been done in many localities. I believe Maine to be one of the best localities for raising apples in the United States. I presume, though I am not able to speak from personal experience, that other varieties of fruits will succeed in Maine. I am happy to know that there are those among us who are devoting their time to this branch of industry, and I hope to see the time when every one who has an acre of land will engage more or less in fruit culture.

I reside on the old homestead in this city, where my father planted fruit trees years ago. I have no doubt that they grew at that time with little attention. I have been told by him that all that it was necessary to do was to put a tree into the virgin soil and it would grow and bear fruit. One of these trees was measured the other day by a gentleman from Iowa and myself, and found to be more than eight feet in circumference, at about a foot from the ground. It is a tree of enormous size, but though the fruit is very good indeed, it is an indifferent bearer. It only shows to me that if I had given my attention the last twenty years to fruit culture—to the putting out of trees, I might have added

three-fold to the value of my farm, without a corresponding outlay of money ; and I would advise any man whose land is adapted to it to plant fruit trees, believing that there is nothing that for the same outlay will, if properly attended to, give as remunerative returns.

After the close of Mr. Ham's remarks the Society listened to the

ANNUAL ADDRESS OF THE PRESIDENT,

Z. A. GILBERT, OF EAST TURNER.

An established custom makes it the duty of the President of this Society to give an opening address, in which are to be presented, at his option, such points as are deemed important and worthy the consideration of the Society. In accordance with this custom, I ask your attention for a brief time to such matters as have forcibly presented themselves for consideration in the course of the transactions of the Society during the past year, and attention to which, it is believed, will increase the efficiency and usefulness of the Society.

The year 1875 has been in many respects quite exceptional in general horticultural matters. The vegetable crop was fully up to an average, and in some varieties and in certain localities, even going beyond this. Floriculture was never more successful. In perfection of growth and profusion of bloom it could hardly be excelled. The season was especially favorable for this branch of horticulture, and the increased attention being given to it by nearly all classes of our citizens, will by this success be encouraged to still further efforts than it has heretofore received. In the department which this Society, as its name indicates, is especially engaged in encouraging, no such success can be recorded. Apples have come as near being a failure in this State as was ever the case. Nor is the scarcity confined alone to Maine ; the country over, the crop was short. While in some few localities of limited extent there was a fair crop, yet on the whole the country is short of this indispensable crop. Pears, which are year by year assuming more importance in our catalogue of fruits, were relatively in better supply than apples, yet these did not yield so bountifully as is usually the case. Grapes, open air, were a failure, emphatically. For three years in succession, now, has this fruit been cut short by the cold seasons. Some kinds of the small fruits gave bountiful returns, which in a small measure makes up for the short supply in other directions. Notwithstanding, however, the dis-

couragements of the year, the fruit growers, especially those connected with this Society, are not losing heart in the business, but have full faith that perseverance will be richly rewarded in the end.

The short crop of apples was due in a great measure to the exhaustive effects upon the trees of the bountiful crop of 1874, for very few varieties, even with the exercise of the highest skill and the best cultivation, can be made to produce even a *medium* crop following a *bountiful* one. The trees have not the vital power to produce a bountiful crop of fruit, and at the same time perfect a full crop of fruit buds preparatory for the fruit of another year. So we may ever look for a comparatively light crop of fruit following a bountiful one. This does not at all conflict with the statements frequently made, that these matters are largely under the control of the skilful culturist. In addition to the above reason, a large section in the western part of the State was completely overrun with the tent caterpillar of the forest (*Glisiocampa sylvatica*, Harris). In Oxford, Androscoggin and Franklin counties, nearly all the apple trees were completely stripped of their foliage by these insects, and kept naked and bare by their continued feeding till they attained their growth, which was about June 25th. The extent of the damage done in that section of the State was fearful to contemplate. Of the numerous extensive orchards in Androscoggin county, where the owners rely upon the apple crop as their chief income, only two succeeded in saving their fruit from destruction. Some who have annually in the past sold their fruit by the hundred barrels, have been dependent upon the market for their table supply. Space will allow only an allusion to this matter here, yet its importance demands a more extended notice. The Society should, therefore, at this meeting take measures to have the history of this wholesale destruction carefully written out, together with the remedies applied—especially those which proved successful—that it may go as a record upon our next report, for future reference and for a guide to those seeking the destruction of the insects. We have not done with it yet, and the subject is commended to the Society as one too important, especially at this time, to be passed by with the allusion given to it here. It has become a serious question in fruit growing, whether man in all his wisdom shall succumb to an insignificant insect? Man, whose engineering skill has overcome the barriers of the Alps, has sent the locomotive with its long trains of cars freighted with the wealth of nations down the slopes of the Rocky Mountains,

and over the canons of the Sierras, across waterless deserts, and through the Hoosac Mountains—shall he, must he, lay down vanquished at the approach of a crawling caterpillar, a codling moth, or a curculio? The idea is actually too serious to be ridiculous.

Notwithstanding the season was so unfavorable to the production of fruit, our exhibition at Portland succeeded in drawing together a very creditable collection of fruits—excellent in sample and certainly satisfactory in extent and variety. This success in such a season proves conclusively that we have secured a hold upon the leading fruit growers of the State which may be relied on at all times. This is certainly encouraging to our youthful Society. While its officers and members are struggling to make its exhibitions successful and its meetings useful, and are laboring in all ways to promote the interest they have in hand, it certainly is encouraging to know they have the good wishes and can depend on the assistance of prominent individuals interested in pomology. The arrangement of holding the exhibition in connection with that of the State Agricultural Society, gave good satisfaction to the friends of our Society, inasmuch as it gave opportunity at the same time, and without additional expense, to visit the general exhibition. The business relations between the two societies were carried out in a manner perfectly satisfactory to all concerned, and with perfect harmony and understanding. It is a question, however, whether the distinctive usefulness of our Society is promoted to that extent in a combined exhibition that it would be separate and distinct. It is true we get more visitors to a combined exhibition, yet the interest is not concentrated so closely upon this one department, and there is less opportunity and less inclination to study it in detail. The future course of the Society in this regard should, and doubtless will, receive careful consideration.

The Catalogue of Fruits, published in the last report, and to the preparation of which was given much careful attention, on the whole was well received by the intelligent fruit growers of the State. It is a difficult matter for even our best informed fruit growers to arrange a catalogue of fruits that will be satisfactory even to themselves, and still more difficult is it to satisfy a discriminating public. The list, however, needs some careful pruning. In the small fruit class it should be more elaborate, and should be followed by a full description of varieties and the success attending their cultivation in this State. Thus it would become an intelli-

gible guide, and would save to the beginner many mistakes and perhaps the loss of much time.*

Pears are to receive much more attention among us than has been given them in the past. Fruit growers are learning that they may be successfully grown to a large extent. Yet there is great lack of knowledge as regards varieties and their adaptation to Maine, and there is anxious inquiry for facts by which to be governed. The varieties of pears should be written up, that all may avail themselves of the most advanced knowledge available in the State. It would save a vast amount of experimental work, the results of which are largely a knowledge of what not to do. We want to assist in enabling people to lay out work that will result in something positive. Negative results may assist posterity, but will not grow pears for the hungry thousands who want them at the present time.

A list of fruits for amateurs should early receive the attention of the Society. To convince us of the importance of this we have only to go into the fruit gardens of those who have planted without an extensive knowledge of varieties, and see the mistakes made in their selections. There is a call here for information which the Society is able to give. No better method presents itself than to raise a committee to prepare a list and present the same to the Society at a future meeting.

A supplementary list of apples should be prepared, embracing all the varieties tested or grown in the State. There are many standard varieties not now on the list which have been introduced here and there, but are confined to narrow limits. It is quite probable that some of these are worthy of extensive dissemination. They should be catalogued and described, and the success attending their cultivation given to the public.

The extreme northerly portion of the State is giving greatly increased attention to the planting of fruit trees, chiefly apple trees. Cultivators there succeed very well with some of the hardy varieties of autumn apples, yet they have not formed a satisfactory list of winter apples for their locality. Great inquiry is made through Washington, Aroostook and northern Penobscot, Piscataquis, and Somerset counties, for good winter apples that are sufficiently hardy for their climate. Their seasons are short, and most of those varieties of winter apples which are grown to a

* The catalogue of fruits as published in this volume was revised by the Society at the Winter meeting, in accordance with the suggestions here made.—SEC.

high degree of perfection in the southern and central divisions of the State do not mature their growth when taken to the northern section, and do not prove hardy. This Society should take measures to learn the merits of varieties of apples grown in high northern latitudes in other States in our own country, and also in foreign countries; and if any promise to be valuable for our high latitude, they should be introduced and tested. A special committee might be raised to look up the matter, by searching for information through all available sources, and procuring scions or trees of such varieties as promise to be valuable, with instructions to report progress from time to time. Northern Vermont is growing to a considerable extent, some varieties of late-keeping apples which have never been introduced here.

Gentlemen, I have thus briefly alluded to some matters which have presented themselves to my mind during the past year—matters which seem to be within the reach of the Society in its present standing and condition. While I would not press these as paramount to all others, nor to the exclusion of others which you can name, yet we must ever bear in mind that we are organized for a purpose. The State, seeing the need of work in the direction in which we are supposed to be laboring, granted us a small fund from its treasury that we might successfully carry on the work. We owe it to the State that we work faithfully, and show good returns for all we receive from her hands. It is true, no striking and marked results can be made apparent at once, but if in the work of this Society its true object be ever held in view, and ever kept to the front, we shall as a Society meet with that success for which every true member is laboring—the promotion of the Pomology of the State.

The next exercise of the afternoon was the presentation of the following paper, on

ORCHARDING AS A BUSINESS.

BY ALFRED SMITH, OF MONMOUTH.

Mr. President, Ladies and Gentlemen:—In coming before the intelligent members of the Maine State Pomological Society, I am well aware of my inability to do justice to the subject of Pomology or Orcharding as a business in Maine, as it is a subject of so great interest to every man, especially to every farmer and lover of fruit.

Maine is only in its infancy as a fruit growing State, and if the business is intelligently entered into and persistently pursued by

our enterprising young men, Maine will bear off the palm over any State in the Union in the production of fruit for exportation or shipping purposes to any part of the world.

All fruits are extensively used for culinary purposes, and especially enter into and are largely used as articles of diet. And in a financial point of view, fruit growing will well compare with any other agricultural pursuit in Maine.

It is also ennobling, refining and elevating to our natures, and places us in harmony with the Great Author of our being, who when He formed man planted a *garden* (it is said) filled with all manner of fruit trees and flowers, and our primeval parents were placed in it to cultivate and eat of the fruit of all the trees of the garden save the tree of *excess* or *abuse*, "whose mortal taste brought death into the world and all our woes;" and that tree of excess is well cared for and persistently cultivated among us at the present day, and it is hoped that all pomologists will discard it from their list of fruits, for its fruit is bitter, and if engrafted nothing but bitter fruit will take and grow in it. It is, however, perfectly hardy, and never winter kills.

Even nearly all the lower animals, from the smallest insect to the feathered songsters of the air, are great lovers of fruit. Now, (as an example to encourage others to go and do likewise), I will say, that last summer I raised on one-eighth of an acre of land, 875 quarts of strawberries, equal to $27\frac{1}{2}$ bushels, or 220 bushels per acre; consequently had an abundance to spare for the robins, who would carol to me in sweetest lays, therefore I had no heart or disposition to disturb or deprive them of the privilege, as they seemed to share with me the "pleasure and the pride," and would richly repay me for the fruit they ate, in destroying worms and noxious insects; and I was often led to say with the poet Pope, that

—"Just as short of reason he must fall,
Who thinks all made for one, not one for all."

Thus, in growing such beautiful and abundant crops of fruit, we have the consciousness of being benefactors, not only to our own race, but to the lower animal creation as well; also of verifying the oft repeated truth, that what one man has done by working in harmony with the fixed, immutable laws of Nature, another can produce the same results; that cause and effect are stamped on all nature's works,—our own as well.

And here permit me to say, that all discarded fruit (not suitable

for culinary purposes) should not be expressed and distilled into alcoholic beverage, or cider, to curse our race, but converted into vinegar, or fed to our stock, whose health and gratitude will more than compensate us, and the profit of which will richly repay us directly or indirectly.

We need have little if any fear, that *Orcharding as a business* will ever be overdone. If ever the time come that our markets or country are so flooded with apples as to render them worthless for market purposes, then let the farmers throughout the country, holding apples for market, feed one-half to three-fourths to their stock; then the balance would bring them as much money as the whole, thus saving one-half to three-fourths of the fruit for their stock.

When we have seen fruit displayed at the town, county and state fairs, has there not at the same time come over us a feeling of exquisite gratification that we could almost taste? And have we not been led to exclaim, Oh, how beautiful! Can it be possible that such beautiful fruit can be grown in Maine!

Last autumn, while attending the Pomological Exhibition held at the City Hall in Portland, and also the Sagadahoc County Fair at Topsham, and the various town fairs at Monmouth, Wales, Litchfield and Gardiner, for the purpose of studying the different varieties of apples, pears and plums grown in Maine, I would often hear from the lips of gentlemen and ladies in attendance the above remarks, or others similar, "How delicious!" "How beautiful!" "Is it possible!" &c.; and would at the same time instinctively reach out their hands to touch the fruit. I was often led to remark to them, that the trees on which this fruit grew were well cared for, and persistently fed with all the elements that go to make good fruit, and were not robbed by grass and the scythe, which always takes the lion's share.

All who attended the Pomological Exhibition at Portland, or the county or town shows, and viewed the long tables, spread with delicious fruit of all kinds and varieties—grown on the highly cultivated trees of Maine—must have been impressed with the fact that Maine can grow as good apples and pears as any of her sister States, and much better adapted for shipping to foreign countries.

Now what are the practical lessons to be learned by all who attended the various shows of fruit, and viewed the rich and beautiful agricultural products, grown and presented by intelligent

men and women who dealt with no stinted hand, but with the highest culture possible? The first lesson to be learned, is the cultivation of less areas, less misapplied labor, less spreading out so thin in our agricultural pursuits; unless we have the means, or abundant fertilizers. Second—We should learn the folly of planting out too many fruit trees, and neglecting to take suitable care of them, as thousands do. And such men should learn and remember that fruit trees young or old, are not locomotive like their animals, but tied to the earth in a hungry, starving condition, with but few elements in the soil on which to feed, with *wet feet*, on a retentive subsoil. And if their fruit trees had the power of utterance or could express their necessities and hunger, (as do their animals if thus tied) there would be so much mourning, lowing and bleating as to excite the sympathies of every philanthropist in the land. And had I time, I might portray the condition of thousands of old apple and pear trees, that are in the same woful condition as above described, (otherwise good trees) that might be cut back and grafted to good fruit and be made to bear almost indefinitely, if cared for and suitably fed.

We should also count the cost in planting large orchards. One tree well cared for is worth a dozen or even a hundred without care. A man would be very unwise to buy a dozen pigs to feed when he had not enough for three. I have a number of trees that are well cared for, which last autumn paid me the interest of \$300 per tree, or \$18 each; and one of them was an old hollow tree, propped at every point of the compass to assure its safety when the wind and storms are tempestuous, showing that old trees, (if not too far gone) can be rejuvenated by proper culture, cutting back and pruning or thinning out the boughs annually, and may be made to forget the habit of bearing only alternate years and become annual bearers—and the fruit can be increased in size from two to three and four inches in diameter. Now the rule in mathematics always holds good, that spheres are to each other as the cubes of their diameters; consequently, if you increase an apple that is two inches to three inches in diameter, you gain 237 per cent.; if it is increased to four inches you gain 700 per cent. on the size of your fruit, while your fruit will sell for double and find a ready market.

The Roxbury Russet is known to be a medium sized apple, yet I have attested the above fact by high cultivation, increasing it from two inches in diameter to three and three-quarter inches,—

some of them weighing nine ounces—and have, for the last three consecutive years, been awarded the premium of the Pomological Society for the best dish of this variety, at Bangor in 1873, and at Portland in 1874 and 1875.

We should study nature in the forests. She mulches with a liberal hand, and lets no grass grow, to get the first share in spring. Fruit trees, though large, cannot care for themselves near as well as the grass that grows under them, starting as it does the first of May and getting the first share of all the elements necessary for growth and early maturity of the wood, bark, and fruit. Consequently but little organizable matter is stored up in the bark and buds for fruit the next year. It should ever be remembered that fruit trees, like animals, consist of two essentially distinct parts: one, the organized material of their structure, the other the organizable matter out of which additions are to be made to that structure, and that under no circumstances whatever can growth take place except in the presence of the latter. This law is not only one of the foundations of vegetable physiology, but one of the most important of all facts for us as culturists to remember, explaining as it does the sources of success or failure in many of the operations in which we as agriculturists and pomologists are more or less engaged.

It is said by chemists, that the coarse soils of Maine, Massachusetts and New Hampshire, are as rich in all the elements that are necessary to grow trees and plants, as are the deep, soluble soils of the West; that the only difference is, that they are locked up, and only a small per cent. is set free or rendered available as plant food yearly, by water, the great solvent in nature. Consequently the soil of Massachusetts is in no better condition to grow apples and pears than is the soil of Maine. My experience is, that we can raise pears in Maine as abundantly as Massachusetts can, if we feed as high and as constantly. They need the best of culture, and will bear it as well as do our apple trees, and are not subject to as many enemies. The borer and caterpillar do not trouble them; they will fruit much sooner than the apple tree, and will pay all expenses, four fold, before the apple tree will fruit. Therefore, every man that has land, and especially every farmer, should plant out a few pear trees. They will keep our sons from being tempted to rob those that do raise them. Also plant a bed of strawberries, it will keep us out of the *tall grass*; and a few black cap raspberries, they may be grown as easily as pigweeds,

and are hardy and bear abundantly. But the apple is undoubtedly the most profitable fruit for general and extensive cultivation.

Fertilizers. It will be seen by the foregoing remarks on the coarse soils of Maine, that I am a great friend to artificial fertilizers and home-made fertilizers as well. There is, I firmly believe, a necessity of using salts that contain alkalies. Nitrate of soda is procured native from parts of Brazil and Chili, and it is said that nitric acid is obtained from it, and has been somewhat used as a fertilizer. As has before been observed, I have no doubt but there are all the necessary elements of fertility in the soil of our old fields and pastures, but they are so locked up in insoluble compounds that vegetation can receive little or no benefit from them. There is undoubtedly a want of soda, the base of common salt, and potash, as well as phosphates and sulphates in a soluble state to enable plants to produce heavy, well developed seed. Hence the necessity of applying artificial fertilizers containing an ample supply of all the above constituents. Every tiller of the soil of our old worn out fields and pastures should remember that year after year for a half century or more, the elements of fertility, particularly the phosphates, have been withdrawn in the shape of live stock, beef, butter, cheese and grain, and transported to our markets, while comparatively little has been returned to our soils.

In order to be successful as pomologists or general agriculturists, we should understand all the conditions necessary to obtain the best and largest returns for our labor. Our lands, if flat and not naturally underdrained, should be suitably drained (especially for orchards and fruit growing purposes,) and if possible should be hard wood or rock-maple soil, as fruit trees are not like alders and willows, and cannot live in water; consequently, care must be taken to get rid of all stagnant water, not only from the surface soil, but from the subsoil. Then the soil should be well cultivated in every respect, abounding in all the elementary constituents or compounds that go to make perfectly organized trees, fruit, plants, seeds and bulbous roots. Nature has stamped on all vegetable life an instinctive tendency to produce perfectly organized seeds, plants, and trees, that they may reproduce themselves in perfection; and this cannot be done, if chemistry is true, without the presence of the above described elements and compounds.

Men of small causality often jump at false conclusions, and ascribe to effects wrong causes; and much has been said *pro and*

con, in regard to chemical fertilizers, that have been analyzed in the laboratory of the chemist, still they have been pronounced by many to be spurious and a humbug. Nevertheless, "let the test of intelligent experience be our most faithful and unerring guide," and let our fruit trees "be our most reliable laboratories," and their fair and beautiful fruit "our best and most instructive expositors" in regard to Fertilizers.

Fruit trees take nothing from the soil or air, save water, light and heat, which they absorb, till they are in leaf, and the *spongioles* (mouths of the rootlets) are formed, which is about the first of June in Maine. The above fact is attested by cuttings, that get in leaf before they form their roots. They form callus (during the process of leaving) showing a protruding fleshy ring between the bark and wood, and then send out their fibrous roots. Thus the leaves and fibrous roots are formed from the organic matter stored up in the bark and buds of the previous year. Consequently, if grass is permitted to grow under the trees, they get nothing but the *orts* with which to grow and mature their fruit, wood, bark, buds, and latent organic matter in early autumn, with which to wake up and start into life again the following spring.

Planting young Fruit Trees. If your land is flattish, and a little sloping, and you do not feel able to thoroughly underdrain, lay off the ground into divisions of equal width, as the distances between the intended rows of trees, and in the direction of the natural drainage or slope of the field; then by repeated plowings, each time turning the furrows towards the centre, gather the soil into broad ridges, on the crown of which set the trees, and "dig no deep post holes" to put the roots of your trees in, but let some one hold up the tree, spreading out all the fibrous roots, then dump a part of a cart load of rich soil from the forest or from some other source. You need have no fears in building up around the trunks of trees two or three feet, for fibrous roots will soon come from the trunk thus covered and luxuriate in the rich soil thus applied, and it will also keep mice and borers from committing depredations on your trees. By this method you rapidly get rid of the surface water, and also a portion of that from the subsoil, and obtain a deep, mellow soil

This method will be found preferable to the old one of digging large, deep holes, down into the hard, retentive subsoil (no matter what may be their diameter) and half filling them up with surface

soil and manure, and then planting the trees. For the first year or two they may flourish well; the young, fibrous roots, finding plenty of plant food near at hand, rush downwards and luxuriate in it during the dry season; sooner or later comes a wet season, and the retentive walls of undisturbed subsoil act like a tub to retain the stagnant water, and the poor tree, sentenced to a life of wet feet, as surely falls into decline as a young maiden would in similar circumstances.

Training Fruit Trees. My experience is in favor of training fruit trees low. A stem four feet in height will be found the best and most convenient for most purposes, all things considered. My reasons are, they are less exposed to storms and gales of wind, are under better control, more easily pruned, the fruit more conveniently gathered. Also their roots are better protected from the effects of drought, and the bark on the trunks is not as much damaged by the action of the sun at any season of the year. The effects of the sun in March and early spring on young, thrifty trees, in a torpid or dormant state, is more potent than when the sap is in circulation, often causing the bark on the exposed side to blister and peel off, and inducing decay. Large trees often suffer in a similar manner. It will be remembered that the stem and limbs most exposed to the radiant heat of the sun in March, when the tree is torpid, are the first to suffer from disease. The stems of fruit trees in a climate like ours, noted for sudden changes of temperature from one extreme to another, should have some protection from the sun, if possible. Therefore, the protection to the stem by low branches, is of very great importance, and when considered in all its bearings, will be found the most desirable form. In my experience, for profit and fruit, (and since we have so many enemies to contend with) I find it better to cut back and *prune down* than to *prune up* unless we wish to grow wood and fruit (if indeed we get much) sky high.

There is but little utility in plowing under the branches of fruit trees; better mulch the soil and it will grow mellow, and thus retain the water that otherwise quickly evaporates leaving the tree to suffer in drought. It answers a much better purpose than plowing or digging around them, thus disturbing and breaking the fibrous rootlets, which (in drought) very much retards the growth of your trees. Let Nature teach us in the forests. *She never plows*, but mulches with a liberal hand and never tires. If you have no mulching or muck that you can obtain, take the

upper soil from the most convenient acre of land near your orchard, and mulch or build up under the branches with it. You need have no fears in mulching or building up two feet or more around the trunk and as far as the branches extend. If you are an unbeliever in it try it and note the results, and you will soon become a believer. While trees are young, or before arriving at a bearing condition, plow and cultivate between the rows, but without disturbing the branches or the soil under them. Thus planting with annual crops, as beans, potatoes, or bulbous roots—as they grow and ripen late in the season—your trees get the first share with which to ripen their fruit, wood and bark.

Get Maine Trees if Possible. Speaking from my own experience, I prefer to have my trees grown in Maine, and as near home as possible, and have the soil prepared and everything in readiness, so that they may be set in the shortest possible time. With proper care, trees thus removed will scarcely receive any perceptible check in growth. This is not always practicable. We should be careful, however, to get our trees from a reliable nursery man.

It has been truly said, that “that *genus*, the tree-pedler, should be classed in the same catagory with those other enemies of the fruit culturist, the curculio, canker-worm, borer, &c.”

Large sized young trees. There has been a great demand for extra sized trees for some years past. This is all wrong. In order to grow these large sized trees, they have to be forced by stimulating manures, especially during the last years of growth in the nursery. Then we are deceived by their fine appearance, having large, beautiful tops, while the roots are few and straggling; and even these, in removing from the nursery are often cut short, leaving few if any fibrous roots, and when planted out in orchard form they require the first season to recuperate, and have received a check from which they can never fully recover. Medium sized, stocky trees, with well ripened wood and bark, and many fibrous roots, will be found much more reliable and satisfactory than larger and older trees, and will come into bearing sooner, and are less liable to disease. The younger the trees, the more roots can be preserved when removing them from the nursery—better pay the same price for them. This is true in my experience, for I can soon grow a handsome top if I have a fibrous rooted tree to begin with.

Varieties. There are already too many varieties of autumn fruit cultivated in Maine for our markets, or profit. We cannot compete with western apples that glut our markets in autumn, consequently we shall be obliged to feed such fruit to our stock, or re-top such trees to late winter fruit for shipping purposes, in the production of which we can compete with the world. We also cultivate too many sorts of winter apples for profit or for convenience in gathering and barrelling—too many odd barrels.

First on the list of winter fruit I place the Roxbury Russet, as best of all late keeping sorts. In my experience with it for the last fifty years, it has always proved an annual and good bearer. It needs high and persistent culture; and so do all varieties to be profitable for any length of time. In my orchard in Winthrop, I had two trees of nearly the same size, one a Roxbury Russet, the other a Baldwin. On a certain year each tree bore eight barrels of apples. The next year the same Russet tree bore four barrels of apples, while the Baldwin bore none, and none to speak of for four years, or while I remained on the farm—having over-borne.

The row in which this Russet tree stood, contained eight other trees of the same variety, making nine trees in all, which bore the same year forty-five barrels of apples—an average of five barrels per tree; and these were sold the 8th of July for five dollars per barrel, at Winthrop depot, while my Baldwins were sold for two dollars per barrel the last of April of the same year, not being able to keep them longer in consequence of their rotting. In my experience the above is about an average, with these two varieties, for the last fifty years, in the locality of Monmouth and Winthrop. Last year I sold my Russets in Bangor and Portland for \$4 and \$4.25 per barrel the last of June, while Baldwins generally sold in May, for about \$2 per barrel.

The Baldwin *will not bear high culture* either in our valleys or on flat lands near lakes and streams of water, and will kill in winter and spring with the suddenly alternating thawing and freezing of the bark and wood, caused by the hot mid-day sun.

It is not excessive freezing (as many suppose) that winter kills, as was shown by the fact that last winter the mercury was much of the time at extremely low points, the steady cold continuing through the winter and spring, and the frost was taken out gradually in the late spring, there being no alternate changes during winter and spring; consequently, the unripe buds of the peach

were not injured, but blossomed, and many fine peaches were grown in Maine last summer.

The greatest fault I find with the Baldwin, is its tendency to winter kill once in six or seven years, and its habit of over bearing alternate years, when fruit is so abundant as to render it almost unprofitable for barreling. Its symmetrical *form* and brilliant *coloring* are its only good qualities. A majority of the fruit has a bitter, disagreeable taste. Notwithstanding this, so long as people blindly associate something good with red and yellow, so long must we grow red and yellow fruit, even at the expense of quality, and our markets do and must make color paramount to quality. Consequently we must seek for hardy, annual bearers that will bear high culture, and combining as many desirable qualities as possible. In my opinion, the Northern Spy should take the place of the Baldwin in Maine. It is a hardy, annual bearer—as large and symmetrical in form as the Baldwin, the color and quality as good, a vigorous, upright grower, but a little tardy in fruiting, as are all trees of upright habit. This fault can be easily remedied by root-pruning, thinning and cutting back and bending down and hanging weights on the branches in the growing season.

The limited demand for the crab apple will undoubtedly render it unprofitable, other than as a hardy stock to graft upon, and there are other hardy Maine varieties quite as good for that purpose.

Perhaps I ought to modify the above remarks, as I am well aware the locality and conditions of soil very much modify the quantity of fruit, as well as the quality, of many varieties; especially is it so with the Roxbury Russet, Baldwin, Nodhead and Ribstone Pippin. They succeed the best under good culture, and will bear it well on high “rock maple” ridges of land; but will prove unprofitable on flat lands (as Northern Maine and the flat lands of Penobscot county). The R. I. Greening, Yellow Bellflower, and all other varieties possessing hardy qualities, will prove profitable under good and constant culture, and will adapt themselves to a wider range of locality and soil in Maine than do the more tender sorts. Some varieties require a relatively large amount of potash. The Roxbury Russet undoubtedly requires a large amount of sulphate of iron to cause it to produce large, fair and well developed fruit abundantly. Perhaps it is so with the Ribston Pippin and other capricious bearers. Others require phosphoric acid or some other element. No general fertilizer will suit

all varieties equally well in all soils. We should use special fertilizers; because some soils naturally have one or more of the above constituents in excess of what a given variety requires, while they are deficient in some one or more of the other elements required. Thus some varieties are unable to take advantage of general fertilizers and fail to mature their fruit, and while they blossom and set their fruit well, drop it prematurely. We should therefore aim to ascertain what elements are lacking, and supply them; otherwise we may be like the man who "carried coals to Newcastle," giving the soil elements which it already has in abundance, while we neglect to provide for what is really lacking.

In planting an orchard, consult your locality and the conditions of your soil, and seek for a few of the best sorts that will give you the most profit for the labor bestowed. Feed persistently, and do not try to grow good fruit from nothing, as many do. The Rhode Island Greening, Northern Spy, Yellow Bellflower, Fall Harvey, Talman Sweet, and the Sweet Vandevere, are hardy, yearly bearers and profitable shipping apples.

Now it must be conceded that good yearly bearers are more profitable than alternate bearers; that in planting an orchard for market and profit we should seek for annual bearers that will suit the tastes of the people and the demands of trade, and those that will bring the highest remuneration; even if we have to entirely ignore our own preferences or tastes.

Of pears, I regard as the best winter varieties the Glout Morcean, Vicar of Winkfield, Lawrence and Beurre Langelier; as the best for autumn, Maria Louise and Beurre d'Anjou; early autumn, Flemish Beauty, Bartlett and Clapp's Favorite; and for summer, Doyenne d'Ete and Beurre d'Assumption.

In speaking of varieties of apples for shipping purposes, I can do no better than to call your attention to a short paragraph taken from the *Maine Farmer*, entitled "American Apples in England," which says:

"The London (Eng.) *Garden*—edited by Mr. Wm. Robinson—acknowledges the receipt of a collection of American apples forwarded by Messrs. Elwanger & Barry of Rochester, New York, 'packed in a barrel, without spot or injury of any kind.' The editor says: 'At the present season (Dec. 14th), in London, we have no apples that can compare with the high and delicate flavor of the best of those sent to us.' The apples named are King of Tompkins, Hubbardston Nonesuch, Jonathan, Northern Spy, Bald-

win, Famense, Red Canada, Twenty Ounce, Talman Sweet, and a dozen or fifteen other sorts; to nearly all of which descriptions and comparative notes are appended—most of them highly commendatory in tone, and very judicious and candid in statement. Of the sweet apples the *Garden* says: ‘Some of the apples sent belong to the division which American growers term *sweet*, and are the first samples we have tasted of these.’ Of the Talman Sweet it remarks: ‘The fruit is pale yellow, so sweet that one would hardly recognize it as an apple.’ There is no doubt that many of our own fall and winter apples possess keeping qualities superior to the English sorts, of a corresponding season—and it would be no surprise to us if the export trade of apples to Great Britain from this country should assume large proportions within a few years.”

Now as it is obvious that we must soon send much of our fruit to foreign markets, or get small prices for it at home (if we succeed in raising it, as we hope to do), there are many conditions to be taken into account. The fruit should be large, well selected as to size, symmetrical in form, fine flavored, and well colored,—as the cost of transportation on such fruit would be no more than on inferior fruit. The manner of picking and packing, also the size and style of the barrels, should be considered as well.

PRUNING.

There has been much said and written on this subject by different persons, with regard to their experience as to the proper time to prune fruit trees. One says: “The only proper time to prune trees is the month of June, as my trees always do well pruned at that time.” Yet another would prune only on the full of the moon in August; another only on the increase of the moon in November; another only on pleasant, warm days in mid-winter; another on the decrease of the moon in March and April; each assigning as a reason the fact *that they always do well*. Now from these chaotic, superstitious theories or premises, I deduce the following positive truth, viz: that the best time to prune is *any month* or *any time* that the *knife and saw are sharp*, provided the condition of the trees will allow of it. First, before pruning, have your trees in good growing condition, to enable them to grow thick layers of wood to cover the wounds made in pruning. Second, prune only in a sunny, dry atmosphere, that the pores of the bark (that contains that mysterious life-principle of the tree) may im-

mediately sear or close up, thus preserving the bark as near the edge of the wound as possible, and also cauterizing the pores of the wood thus exposed as well. Be sure to prune judiciously once a year. If two limbs touch or cross each other, or form very sharp or acute angles, *one* should be taken out; and every limb that points inward as well. We should not be so unwise as many are, who, after neglecting to trim their trees for a decade of years or more, at last wake up to the fact that their trees need pruning, and almost kill them in the act with axe and saw.

Dormant buds, that start and rob the trees in June, should be rubbed out, and thus save much expense in pruning. If every tree in a young orchard is looked over once in a year with careful pruning, looking to the future and seeing in the infant trees the sturdy trunks and well-developed branches of the full-grown tree, then will the sound of the saw cease to be heard in our orchards, and will have become a thing of the past.

ROOT PRUNING.

Men often say to me: "Would you sever the tap roots of trees in planting in orchard form?" Now the truth is that all high land trees, and nursery trees as well, grown on high land or in the deep soils of the West, do instinctively make or grow with a tap root or roots, that run down to draw water in case of severe drought, and must have them, and if removed will form more roots for the same purpose; otherwise they would dry up. But trees grown on low or flat land having a thin surface soil and a retentive sub-soil, do not produce tap roots; they do not require them, and in planting on such land they may be removed, at the same time cutting back the tops, thus subserving two purposes—first, convenience in planting; also in enabling the tree to form callus, from which will spring fibrous roots to assist in supporting it. Second, they will fruit sooner, as all judicious root pruning and cutting back the top tends to retard the propensity to run to wood. Thus, by artificial culture we can change the habits of fruit trees, rendering them subservient to our wishes, and fixing in them the habit of bearing much fruit, which is more desirable and profitable than growing large, awkward trees to bear fruit for our heirs. There is an old adage that "He who plants pears, plants for his heirs." But this saying is disproved by the fact that pears are made to fruit sooner, or as soon, as the apple, by the art of root and top pruning. Fruit is always at the expense of growth in

wood, and *vice versa*, so that we can have our choice, of *fruit*, or *large, woody trees*.

In my practice in growing *nursery stock*, I first plant in a seed bed and let them grow two years, and the last of July or the first of August, bud them; the next spring, remove them from the seed bed and properly shorten in the roots, sever the tap roots (if any) and cut back the budded stock to within six inches of the bud (thus having the stock to tie the bud to as it grows), and plant them out in nursery rows. Thus I am able to grow straight, stocky, fibrous rooted trees,—that can be removed to the orchard in safety, with all their fibrous roots,—thus subserving the double purpose of convenience in removing, and of fixing in them the habit of fruiting early.

In conclusion I will say: *Nature never makes a mistake*, but always does the best she can under existing conditions, and if we will but study her laws and work in harmony with them, we shall never go wrong, either in agriculture or any of the affairs of life.

The reading of this paper was listened to with close attention, and was followed by a general discussion of the points presented.

Friend JOSEPH TAYLOR of Belgrade, being first called upon, responded as follows:

I feel myself incompetent to speak at much length on this subject, for although I have long been engaged in raising fruit, I have hardly come to a definite conclusion in anything pertaining to it. It seems to me, however, that our friend has a little overrated the Roxbury Russet. With me it does not yield good returns. The soil on which I have planted both my russets and other kinds, is slaty, with some ledge underlying it, and on a side hill where it needs no artificial drainage. I have planted the russet on such a soil and it does not bear. I have enriched the soil and yet it does not produce many apples. The tree has a short growth in summer, and however rich the soil may be it is scrubby. It is true that the fruit will keep longer than any other fruit I raise, but as our President says—if we had any other apple in the time of the russet, possessing the good qualities of our fall apples, we should discard the russet. I should, at any rate; for it is a lifeless, dry, insipid apple with me. To be sure, we call it a good apple, because it is the best we have at its season.

The Northern Spy I don't think he has over-estimated. I gathered last fall from one tree, and that a small one, 16 bushels of

apples. This tree was 16 years old. It is true, as has been said, that the tree grows slowly. They were prime apples; some of them are here on the table. Of that 16 bushels I don't think there is a peck at this time that have begun to decay. They bear every year. The year before, I took 15 bushels from the same tree, and though apples were very plenty, I sold them higher than any other variety I raised. The other varieties I raise are so numerous that it would be idle for me to attempt to speak of them.

I think I have too many varieties. When I have seen a good variety I have had the curiosity to try it, and hence I have got a large variety of apples in my orchard—some sixty different kinds. Many of them I would not dispense with, notwithstanding that it makes it rather troublesome to have so many sorts when you want to sell them; but they will sell as well as the standard and more prominent varieties, such as the Northern Spy and the Greening. I raise the Greening. I cultivate it a little more extensively than any other variety I have. They produce well almost every year.

In regard to pruning, I think friend Smith has hit the point pretty well. I have been almost ready to conclude that early winter pruning is full as good, if not better, than any other season, for the sap has no tendency to move when the ground is frozen, and the wound has all the winter season to dry up and close the pores in the wood and bark. I have also had very good success in pruning in the early summer, because the sap is not then in active circulation. I think it is highly important not to prune when the sap is in active circulation, for then it will leak out and form a slimy coating, and you can hardly heal the wound made by pruning in March. I once knew a tree that was pruned at that season. It was a large tree—more than a foot in diameter—and every spring after that there would invariably be a black substance running down from the wound that was made; it never healed. Reasoning from that I never would cut off a limb from an apple tree in March.

I think we can train our trees to suit our own tastes. My friend Smith says a low tree is better for him. In going through my orchard I hate to crouch; I want free access about my trees. I know a low tree is convenient to pick fruit from, and I suppose the wind don't have so much effect; but you may have a broad top, and have it so you can walk along and not have to pick up your hat every time you go under the limbs. If you are to plow the orchard, of course you want a chance to get round under the trees.

My orchard has not been plowed for ten years; it is more than fifteen years old. I have mowed it every year. This may seem strange, and it would be so if I did nothing more about it; but I mulch my trees every year, spread manure, and spread broadcast all the ashes I can procure. I want to be liberal in spreading ashes; their effect is wonderful in bringing trees to bearing. I mulch with straw. I am very cautious how I put sawdust round my trees; I don't think it is good for anything except to keep grass from growing; it has no manurial property and adds nothing to manure; I don't want it mixed with manure; it is excellent *bedding*, but thrown in the cellar it keeps the manure from rotting. Pine sawdust will keep it many years; hemlock rots quicker, say in three or four years. I saw an article a short time ago in the *Maine Farmer*, recommending sawdust as an excellent manure. The writer said he was going to spread it among his grape vines; and I said, "the more sawdust he spreads the less grapes he will get." I want my ground covered, and would not care if it was covered with straw a foot deep. You can get no manure better than ashes; you want something to make the ground loose, and ashes will do it as well as manure. I mow among my trees every year, but am not particular to carry all the grass to my barn. I mulch so much about the trees that it keeps the grass from growing there and produces a good growth of the trees; and from these trees I raise fruit every year, with hay from the adjoining land.

I set my trees about 30 feet apart, but am not particular to set them in direct lines. I put them in the *best places*, even if they don't happen to come exactly in rows. Setting 30 feet apart, I find in the earlier stages of growth there is a large space unoccupied, and I have concluded to set a tree in the centre of each square made by four trees. In that way I can get more fruit for the first 20 or 25 years. In that time they won't grow so that the tops will interfere. As I am an old man, I should want my trees pretty near together, but perhaps by and by my children would want them further apart.

I will just allude to pears. My culture of pears has been limited, but I have raised some for 20 years. I have raised excellent Bartlett pears; the pears have been large and the trees have come to bearing early. The Flemish Beauty fails almost every year. I used to grow nice ones, but for the last 6 or 8 years, though I have manured liberally and the trees are in good condition, the fruit has cracked. They grow nicely the first part of the season.

I have the Glout Morceau ; there are a few on the table. It is a late keeper, but they have not done well with us yet ; I don't know what they may be by and by. Besides these, I have perhaps 15 or 20 different varieties, but I cultivate more generally the Bartlett and the Lawrence. The Lawrence I consider a very excellent pear, but with me it does not fruit very well. It will blossom exceedingly full, but the fruit does not set well on my trees. I don't know what the cause is, as I manure and mulch them well and cultivate under the trees. I have planted potatoes and corn.

I want to say something about planting potatoes in an orchard. I don't think it is so good a crop to grow there as those crops which grow above the ground. It seems to me that the potato takes more from the soil than any other vegetable. I would rather plant corn. I have an idea, too, that the corn has a tendency to keep off insects which, if they had free access to the trunk, would fatten on it.

Mr. HENRY McLAUGHLIN of Bangor. I have some objections to the ground taken in the paper of Mr. Smith, as to the time of pruning. I think the general feeling among orchardists would be very much against pruning at all seasons, which would be the rule if we may prune whenever the saw or knife is sharp, for these should be sharp *all* the time. I think a tree of any size will bear the pruning of its small twigs at any time of year without material injury. I think, too, that the time to prune is when the twigs are small ; but if you cut off large limbs in the spring of the year, in March, April, May or June, there will be a serious wound that will not heal. I remember some years-ago, when spring pruning was more thought of than now, that my father was obliged to cut a large limb from one of his trees. He took it off about a foot from the trunk of the tree, and in the fall cut it up close to the trunk, so that it healed over. Sometimes one is obliged to cut off a limb in the spring, and when that is the case I would recommend that it be done in that way. I prune a good deal. At one time the trees rather got the better of me, and when I had them pruned in some cases I had a third of the tree cut away in the month of November. I had a good crop of apples and had no trouble with the trees. I think very favorably of cutting out the center of the tree and leaving it so that the rays of the sun can penetrate among the branches.

In regard to distance of planting, I think the idea is gaining ground in other States, that with a fear of getting our trees too

near together we have gone to an excess in the other direction—have put our trees too far apart. I think if we put our trees 30 feet apart, with one in the center of each square, they will afford better protection to each other from the heat or cold, and especially so in hard seasons, than if planted at greater distances apart; and it will be many years before trees so planted will interfere with each other. Trees like the Tetofsky, which is a rank and upright grower, will bear to be put nearer together than those like the Duchess of Oldenburg, which has a tendency to grow downward. The Tetofsky will do better with its main limbs starting from the trunk at two feet from the ground, than the Duchess at four or even five.

As to kinds, I think the Northern Spy, in our section of the State (the north and east), has not been a success. I know one orchard, of perhaps fifty trees, entirely of this variety. It did pretty well with high cultivation, until it was somewhat neglected. It is now a failure.

REV. J. A. VARNEY of North Vassalboro'. The paper which Mr Smith has given us is a valuable one, and for the most part I agree with him, though on some points I am obliged to differ. I have been guilty of spoiling small trees as well as large ones, by pruning from March to June, and I would not recommend cutting trees in either of those or the intervening months. I have experimented on a small scale in cutting nursery trees during those months, and have found that it has almost invariably injured them. In regard to burying up the trunk of a tree—I don't know but it might answer to put some substances permanently around the trunk, but I should want to try it on a small scale at first.

A tree at four years old is about worthless in my opinion if it has never been transplanted. But if it has been taken up the first or second year, its tap root cut, and the opportunity given for other roots to start, you may remove it successfully. As to the fibrous roots that may be on a tree brought from a distant State here, I consider them entirely worthless. Their value is very soon gone after they have been taken out of the ground, no matter where the tree was taken from.

One other thing—that is in regard to raising wood and fruit. I understood the position taken in the paper to be, that if you would have a rank growth of wood you might do so, but if you would have early bearing you could secure it by top and root pruning. Now I think there are certain varieties that you can treat so as to

give *both*, growth and early fruit. The Duchess of Oldenburg and the Tetofsky will invariably grow and be loaded with fruit at the same time; so that early bearing depends on the natural tendency of the varieties to produce fruit early. I believe it utterly impossible for a Northern Spy to be brought to produce fruit early.

MR. SMITH. Why is it that pear trees now bear so early, while formerly they never bore until they became large? Is it not this same treatment of root pruning that has brought that about?

MR. McLAUGHLIN. Is that the case?

MR. SMITH. I think it is.

MR. McLAUGHLIN. My own impression is that a seedling pear will require as long a time to fruit now as ever it would.

MR. SMITH. I think treated as I would treat it, cut the tap root and prune judiciously, and it would come to bearing early.

MR. McLAUGHLIN. I believe it is a principle acknowledged by all, that continued manipulation of varieties, budding and grafting over and over again, will induce early growing and early bearing. I suppose, as an illustration, that the Vicar of Winkfield will come into bearing now earlier than it would years ago, because it has been worked on early bearing stocks year after year in succession; and the same rule may apply to apples as well.

In regard to distance, I think very much depends on the amount of land one has to plant, and it should also be determined by the location of the ground to be planted. If in a very exposed location, I should plant nearer than if in a sheltered position. I would also recommend protection of the trees as much as possible from the hot sun of February and March; and if the trunks of pear trees were exposed to the sun to the height of four feet, instead of two or three, I should think the danger of their being spoiled by what we term sun-scald would be much increased; and if I should see a tree that leaned towards the south with a sun-scald—which I never did see yet—I should abandon my theory. I believe we may protect the stem to the height of three or four feet by placing something to the south of it. I cannot believe that early bearing in a tree is entirely at the expense of the growth. I believe that it is possible to have early bearing and good growth at the same time in some varieties.

MR. A. L. SIMPSON of Bangor. I saw in the orchard of Mr. Peirce of Belfast, last fall, quite a number of Bartlett pear trees that were planted so near together that the branches interlaced. The trees were laden with rich, yellow fruit. They were in a

sheltered place, and were planted without any system of rows and squares.

PRESIDENT GILBERT was asked to express an opinion on the statement in the paper that the fruit growers of Maine cannot compete with the Southern and Western States in the production of early autumn fruit, and (Mr. A. L. Simpson, Vice President, in the chair) he responded as follows :

Since I have been called upon, it may be proper for me to add something to what has been said. Let me first emphatically endorse the paper to which we all so instructively listened. I mean no vain compliment when I say that it is very seldom that we listen to a paper which comprehends so thoroughly the leading principles of pomology, and states so fully, so completely and so plainly what is and what is not to be recommended ; at least up to the point where the subject of varieties was entered upon, which is a very delicate one, and one on which we cannot agree because there are so many modifying circumstances.

I want to give a special endorsement to some of the thoughts and conclusions presented, and I hope the Society will do the same. The first position was that the business of growing fruit cannot be overdone. We frequently hear it said that if all the trees brought into Maine should produce fruit, it would be so plenty that it would be worthless. Not only do we hear this in regard to fruit, but we hear the general statement that if men rush into specialties they will overdo them. Now the statement made by Mr. Smith, that the business cannot be overdone, should be endorsed by the Society. We have proved this year that it cannot be overdone. But a very small percentage of the fruit consumed in Maine this year is grown within her borders. This proves that we might increase the business a hundred fold and it would not be overdone. If we could increase it a hundred fold I believe it can be proved that it would then be a better, surer business than it now is.

Another point—few trees well cared for rather than many trees neglected. That is a good and safe doctrine always. There is a disposition to keep purchasing and planting, to the neglect of those trees that are already set out. This is wrong. It is better to give what trees you have the cultivation that is needed rather than plant new trees to be neglected. If I had the privilege of taking you into orchards which I know of in this section, where each tree on the premises seems to be *the* tree that has received

special care, you would see the proof of the position that every tree should be cared for rather than strength expended in planting new trees; for a tree that is not cared for will produce little or no fruit, and fruit is what we want, and not trees. The position should be—"Care for the trees you have. If you can care for many, plant many; if you can care for but few, expend your efforts on a few, and enlarge the fruit."

The example given of what we may gain by enlarging our fruit, was certainly well put, and the gentleman might have gone further and said that in increasing the size of an apple from two to three inches in diameter, you not only increase the measuring capacity 237 per cent., but you increase the value as much, and so a large increase in receipts will be obtained over the small fruit. This is especially true of pears. At the first exhibition of this Society, at Bangor, a noted fruit-grower of that section sold a bushel of Flemish Beauty pears, at the close of the exhibition, for \$6, though pears were called high at \$3. By proper attention it costs no more to grow a bushel of pears at \$6.00 than at \$3.00, and does not exhaust the productive capacity of the tree so much.

The idea alluded to in regard to building up round the tree with chip dirt, mulch, earth, &c., is somewhat new. Mr. Smith said, "If you don't believe it, try it." I have learned that we all should be open to conviction, and if new ideas are brought forward by those who have experience, they should be accepted as worthy of trial.

In relation to varieties, I think there should be some exception taken, when he places the Russet as king. It is so in his locality. In this county it is worthless, while in Monmouth, Winthrop and Manchester it is successful. Those who have attended our exhibitions and seen Mr. Smith's russets, know that he does raise splendid specimens. But the russet is an apple that cannot accommodate itself to a variety of soils. All varieties are not so particular about this; some can accommodate themselves to a great variety of soils.

Friend Taylor said that he had too many varieties. He may have for his own interest, but for the interest of this Society we know he has not, for the display of his large number of varieties adds greatly to the interest of our exhibitions. Like the frogs in the fable, it may be death to him, but it is fun for us. It is proof of his interest in pomology. Now I know the way it comes about—I see through it all. Take a man who pursues orcharding strict-

ly as a business. He is sharp, and takes care to grow the kind that pays him the most money, and *that* is all he cares about. I could cite examples in this vicinity. I know a man who almost worships the Baldwin apple. I don't mean that it is any reproach to a man to care for and cultivate only the fruit that pays him best, but I do say that the fact that Friend Taylor cultivates so many varieties is proof of his interest in pomology in general. He does it because he likes it. He can't help introducing new varieties, because his interest in the matter prompts him to do it. He is just the kind of man we want. His practice may not prove profitable to himself, but it results in good to the public.

In relation to the point suggested for my notice, I think I understand the position taken in the paper, and it is well that it has been brought forward, for it is one to which the attention of the Society should be called. Fruit growers know that in fruitful years there is a season in the autumn, say through the month of October, perhaps commencing in the latter part of September and extending to the middle of November or the first of December, when fruit is perishable, and at that time it is a drug in the market. Look over our catalogue of fruits that come to perfection at about that time. Now these apples must be pressed into market or they are lost; consequently the most profitable kind to grow for market purposes is either a very early or a very late fruit. I think that is a position that every fruit grower will endorse. Either grow early fruit that will bring good prices before the market is glutted, or late varieties that will sell well in the winter. Too large a proportion of our fruit comes to perfection in the months of October and November. Our earliest fruit, well grown and put in the market in good shape, will bring good prices every year. It is true New Jersey can send fruit here earlier than we can grow it, but these perishable varieties of fruit cannot be transported any great distance in good condition. I take the ground we have nothing to fear from the West and South. I think there is more advantage than disadvantage in their competition, for it stimulates us to raise fruit of good size and shape. The fruit raised at the West and South is found, when examined, to be not so compact in its texture as that grown in New England, and especially in Vermont, New Hampshire and Maine. It is true that much of it is large, fair and handsome, but a given bulk of it does not contain so much richness as a like quantity of our fruit. Take our Baldwin, Northern Spy and Russet, and compare them with

the same varieties grown in Southern Michigan, and they may not compare favorably at the time, but it will be because ours have not come to perfection; if you wait till they come to their best condition you will obtain a fruit that is really richer than theirs.

Before the final disposition of the paper I hope we shall give it in the main the endorsement of the Society. I hope there may be suggestions made by which we can modify certain points in it; and therefore, before we adjourn, I shall move that it be laid on the table for future consideration.

MR. GRANVILLE FERNALD of Harrison. There is one variety of apple which has not been mentioned this afternoon, that is the Hubbardston Nonesuch. It has been grown extensively in some parts of the State, and is esteemed by many as exceedingly valuable. Some in my section esteem it higher than any other variety. I don't raise it myself, but I think it is quite largely raised by Mr. Perley, and that Mr. Pulsifer of Poland, has quite a large number of the trees.

PRESIDENT GILBERT. Throughout the whole State, with the exception, perhaps, of the extreme north, the Hubbardston Nonesuch is considered a valuable variety for cultivation, and it is the universal testimony that it is exceedingly prolific. It is not so hardy as some other varieties, but it succeeds well in all respects in this county. Mr. Pulsifer has several acres of that kind, and certainly they present a splendid appearance in a bearing year, when they are covered with fruit. Those who have cultivated the Hubbardston have noticed the peculiarity of its growth. Its branches are somewhat slender and pendent when loaded with fruit. The largest fruit is on the largest limbs, and toward the ends it grows smaller; and so we have the tree loaded with fruit that seems to be graduated in size to the size of the twigs, and all well colored. I know of no handsomer sight than a Hubbardston well loaded, and it is always adapted to the wants of those who grow fruit as a business. It is not a late-keeping variety, and should be marketed before January, though under favorable conditions it will keep through January.

MR. SMITH. I did not speak of that apple, neither did I of the Nodhead. They are both good apples, and I presume they could be shipped to any part of the Union in the fall. I put the greatest stress on having yearly bearers, and the Hubbardston is not a yearly bearer. With me it bears bountifully one year, and the next year there is not an apple on the tree. If it bore every year

the tree would soon be exhausted. Unless you can remedy this by thinning the fruit, it is a serious objection. The annual bearers are the most profitable.

The subject was laid on the table.

Adjourned.

EVENING SESSION.

The society re-assembled at half-past seven o'clock. A paper was presented by Granville Fernald of Harrison, on "Cherries in Maine," and one by Lyman F. Abbott of Wilton, on "Small Fruits,"—both of which, with the discussion which followed, are here given :

CHERRIES IN MAINE.*

BY GRANVILLE FERNALD.

In considering topics of popular interest, the discussion of which is presumed to promote the general intelligence, health or moral elevation of the people at large, the essayist is expected to give his reasons "for the faith that is in him."

I am aware that the history of the cherry tree in our State for the term of, at least, one generation back, is not calculated to inspire much enthusiasm in the minds of those who wish to adopt the business of fruit growing for profit; and the fact that the common feeling and expression regarding the cultivation of this delicious fruit, indicates a conclusion that its culture and successful production is a hopeless undertaking, is almost enough to deter one from attempting to combat the well-settled convictions of many highly intelligent and influential fruit growers, as well as the prejudices of the less informed, non-professional class, who take the results of common observation and hearsay as proof positive of the truth or falsity of any special theory.

It will be admitted in the commencement that certain causes, hitherto undefined and generally unknown, have for many years banished the cherry tree from most of our gardens. Within the memory of many of us, the cherry was a thrifty, hardy and productive tree, growing rapidly from the start, bearing early and annually heavy crops of juicy, healthful fruit; of all fruits, combining in the highest degree those qualities which satisfy and cheer the parched palate during the burning heats of midsummer. With

* The cuts used in illustration of this paper were furnished by Messrs. Luther Tucker & Son, publishers of the *Cultivator and Country Gentlemen*, Albany, N. Y.

what pleasure do I remember the time when the cherry tree was in that healthy condition; the favorite haunt of boys, girls and robins in the long, warm days of July, when bread and butter grew stale to the taste, and the longing of nature for some refreshing substitute, sought and found the gratifying boon amid the tall grass where the fragrant strawberry loves to hide, or among the spreading branches of the cherry trees in my grandfather's garden, where each year a bountiful supply of fruit rewarded our patient waiting on the season's processes, and fixed upon our taste the inextinguishable love of the "tame" cherry which subsequent experiences of tropical and other fruits, then unknown or untasted, have never been able to make me forget! But with this momentary indulgence in one of the sweet reminiscences of my childhood, I hasten to the consideration of more practical questions connected with this discussion.

In my treatment of this topic, I find it quite impossible to avoid touching upon much of the ground which has been already traversed by some of our most distinguished horticultural writers, in order to give to the discussion that free scope which the occasion demands. Amid the immense mass of the present literature given to the world, on this and kindred subjects, we find comparatively little that is absolutely new; and the fact that there exists the necessity for constant reiteration of venerable maxims,—of "line upon line and precept upon precept"—may be a sufficient excuse for employing the ideas, illustrations and language of more worthy advocates of the cultivation of those gentle arts by which we live and ultimately rise to a higher plane of civilized and social existence.

Downing, who gives a somewhat elaborate account of the history, uses and mode of cultivation of this fruit, says: "The cherry came originally from Asia, whence the Roman General, Lucullus, after a victorious expedition into Pontus, was reputed to have brought it to Italy from Cerasus, a town of that province, in the year 69, B. C. According to Pliny, the Romans, 100 years after this, had eight varieties in cultivation, and they were soon afterwards carried to all parts of Europe. The seeds of the cultivated cherry were brought to this country very early after its settlement, both from England and Holland."

Late American authors, in classifying the various kinds of cherries, have discarded the methods of older writers, and the cherry

is now divided into only two distinct classes. The first class comprises the Hearts and Bigarreaus, and the second the Dukes and Morellos. Mr. John J. Thomas, in his recent admirable revision of his *American Fruit Culturist*, says of these two classes: "The first is characterized usually by the tall, upright growth and pyramidal form of the tree, by the large, vigorous and straight young branches, and by a sweet or bitter, but not a sour taste. The second class, or round fruited, has small, irregular and thickly growing branches, and a decidedly acid fruit."

CLIMATOLOGY OF THE CHERRY.

Although some varieties of the cherry are rather delicate in constitution, and do not succeed well in the extreme northern parts of our country, it is generally well adapted to the temperature of the Northern States, and may be successfully propagated anywhere north of the latitude of Virginia. Cole says: "They do best in elevated, tolerably cool locations, as great heat is injurious," and that they fail in the Southern States.

Thomas says: "At the South and West, the finer varieties of the Heart and Bigarreau cherries do not flourish. This is supposed to be caused by the hot sun upon the bark of the trunk, and by rapid growth, preventing a sufficient hardening of the bark." On the latter point, Cole remarks: "The rapid growth of the cherry tree renders it liable to injury, as the young wood is tender, and the bursting of vessels from the extremes of heat and cold in low, warm locations, causes the gum to ooze out, which is very injurious or destructive." Downing says: "We have seen this tree, when forced into too luxuriant a growth in our rich western soils, become so gross in its wood as to bear little or no fruit, and split open in its trunk and soon perish."

The above quotations from these high authorities are given for the purpose of showing that the variations of climate in this country have a more marked effect on cherry culture than upon that of many others of our standard fruits, and that the conditions of success in this branch of fruit cultivation are fixed by almost absolute limitations.

Regarding the natural constitution of the cherry tree, I observe a difference of opinion among those writers whose works I have consulted. Thomas says: "The cherry, being a very hardy tree, will thrive in the Northern States in nearly all good soils." Downing remarks: "It is a very hardy tree, and will bear a great

variety of exposures without injury." While Mr. Cole, in the *American Fruit Book*, says: "The cherry is rather delicate." But this slight difference of opinion is not essential in deciding whether the cherry is or is not adapted to the climate of our State. We know it formerly flourished and bore abundant fruit, and within late years it has been found that several varieties of the Heart cherries have proved hardy and productive of remarkable crops of fruit, and there is good reason to hope that in the vicissitudes of nature, under which other fruits and vegetables have their seasons of apparent abatement of health and vigor, from which they afterwards recover and regain their former condition, the cherry tree may recover in time from the blight which has so long continued to affect it.

SOIL AND SITUATION.

There is but one universal maxim for the location of the cherry-tree, and that is, "a dry soil for the cherry." It will, indeed, thrive in a variety of soils; yet, as one author observes, "a good sandy or gravelly loam is its favorite place. It will grow in much thinner and dryer soils than most other fruit trees, but to obtain the finest fruit, a deep and mellow soil of good quality is desirable. When it is forced to grow in wet places, or where the roots are constantly damp, it soon decays and is very short lived." Cole says: "A soil where Indian corn is not very liable to suffer from drought or wet, is best for the cherry. It bears more moisture than the peach or grape, and requires less than the apple, pear or currant."

Under this topic, I quote a brief extract from a paper on the Apple, read before the meeting of the Potomac Fruit Growers' Association, at Washington, D. C., in November last, reported for the *Fruit Recorder*, which seems especially applicable to the matter of the location of the cherry-tree:

"Where there is too much moisture, the plants become succulent, producing a dropsical condition, which is a disease. The fruit of trees in this condition will drop off prematurely, and that which ripens will be tasteless and inferior. When a soil or climate is so arid that it is uncongenial to fruitage, we find the growth of the fruit arrested and its highest qualities undeveloped, as is the case in a very dry season. Too much moisture at the time of blossoming, destroys the fruit. We must not overlook the unhealthy effects of too much moisture in the earth. Those plants

that delight in a dry soil, so planted, become weak, unfruitful and diseased; while those naturally aquatic, are unfavorably affected, in a dry soil. Too much heat or moisture render plants barren from the impossibility of self-fructification."

I consider location, having proper regard to the quality of the soil as to richness, the most important consideration in planting the cherry. In my own experience, I have observed the striking difference in the thriftiness and growth of trees only a few yards apart, as affected by varying degrees of moisture or fertility of the soil. Two years ago, finding some young cherry-trees were too closely planted and would probably crowd each other in a few years, I removed the alternate trees in several rows and set them over among some apple seedling nursery trees, which I was intending to remove to the orchard. Although using much care in the removal of these trees, and supposing they would go right on growing as they had in their first location, I found, after standing in their new place one year, they did not grow any and some barely kept alive. During the last season I have dug around those trees and dressed them with a compost of old barn-yard manure and good loam, and I expect them to show good results of this treatment next summer. While alluding to this example of planting young nursery trees where the soil has been sapped by other trees, I will warn all fruit growers to be sure and have the soil well prepared for the reception of young nursery trees, so that they may speedily commence a new growth of roots and acquire stimulus from the soil to make a good growth of wood the first season after planting.

PROPAGATION AND CULTIVATION.

Since, from the facts and opinions already adduced, it is seen that the cherry is peculiarly well adapted to cultivation in our own latitude, and that special reasons for encouragement to cherry lovers exist, spite of blight and the ill-founded belief of many persons in the impracticability of all attempts to raise them to profit, let us consider the best means of propagating and cultivating this fruit

"The finer sorts of cherries are generally propagated by budding on seedlings of the common Black Mazzard, on account of its healthy, free-growing habit. To raise these stocks the nurseryman takes the stones as soon as they are separated from the fruit and dries them only enough to prevent mouldiness, and then mixes

them with an equal quantity of clean, moist sand. The seeds should be planted either in autumn or spring, in places entirely free from all danger of becoming flooded or water soaked. Spring is said to be the best time for planting, if done as soon as the frost is out of the ground, as the seeds commence to germinate on the first approach of warm weather. The distance should be the same as for the apple, and about the same rules are applicable to their management in the nursery rows."—*Thomas*.

"Budding upon thrifty, one-year old seedlings after transplanting from the seed-bed to nursery row, is the common practice. This should be done about the time or a little after the most vigorous stage of growth, or just as the terminal buds on the shoots commence forming. This period commences usually about mid-summer, and continues under various influences of season and soil for two or three weeks; sometimes more than a month."—*Thomas*.

We read in various treatises on propagation of nursery trees that grafting the cherry is a difficult operation, and if done at all, should be done in early spring before the slightest swelling of the buds, and before the frost has disappeared from the ground. Mr. Thomas admits that in propagating the slower growing or sour fruited varieties, good trees are often soonest obtained by grafting or budding them at standard height on large, straight stocks.

I have tried several times to propagate the Heart and Bigarreau cherries by grafting in stocks of the common Kentish, but have failed of success in nearly every instance. But with the Mayduke and Morello I have had gratifying success, and have some nice trees grafted in May last which made a good growth, and I intend to repeat the experiment this year. I have succeeded in grafting small stocks, after the first of June, with scions of the Mayduke which had been cut early in spring and well preserved.

While the apple, pear, and some other standard fruits generally require a high degree of richness and careful preparation of the soil, and much attention to pruning and giving direction to their growth, the cherry, it is declared, "requires but little cultivation further than occasionally supplying old trees with a little dressing to keep up their vigor, pruning out a dead or crossing branch and washing the stem with soft soap, should it become hard and bark-bound." I am satisfied, from my own experience for several years past, that plowing or any deep cultivation near cherry trees should be carefully avoided. As we are warned against much pruning of the branches or twigs, we should be equally careful about bruising

or tearing the roots, or disturbing them in any way. A. M. Purdy says (*Fruit Recorder*, 1871, p. 168): "In the growing of cherry trees in a light, loose soil, the less the ground is stirred the better—nothing more than surface scratching to keep the weeds down and the surface loose, being required." Mr. Mehan, of *The Gardener's Monthly*, regards it as a matter for congratulation that "we have made much progress in America toward abandoning the old-time notions about digging among fruit trees," and quotes approvingly the editor of the *London Journal of Horticulture*, who says, "fruit trees like solid soil, not loose;" and who advises keeping fruit tree borders solid and mulched with manure.

"Pruning," says one writer, "the cherry very little needs, and as pruning causes the gum to flow, and this brings on decay, it should be avoided except when really required." As to the season of pruning, Downing says, "it should be done in midsummer, as that is the only season when the gum is not more or less exuded."

These remarks and citations on the propagation and culture of the cherry tree will, I hope, cause many lovers of this fruit to make experiments in planting cherry seeds and budding or grafting the stocks with choice kinds. Acting in the spirit of this advice, I have, during the past autumn, planted a nursery of cherry seeds for the purpose of raising stocks for budding or grafting improved kinds of cherries upon, for my own planting or for others, if wanted. I am firmly convinced that the cherry may yet be found a safe tree to plant, if the proper conditions are observed as to location, soil, pruning, &c., and that every family may enjoy the surpassing luxury of eating an abundance of this healthful and delicious fruit.

DISEASES OF THE CHERRY.

I have said that the causes of the disappearance of the cherry tree were undefined and unknown. Of course it is understood I do not ignore the fact that a destructive disease known as the black knot, or black wart, is the direct cause of the failure of the cherry tree in our gardens. It is the *secret source* of this disease that I believe has never yet been satisfactorily determined by those investigators who have written on this topic, and it is doubtful if any true diagnosis of this disease has been obtained by any one. Some have contended that it is caused by the larvæ of an insect which is hatched from an egg laid in a crevice of the bark, which

punctures the sap vessels, causing a discharge and oozing of the gum. Others, that it is owing to some disorganization of the sap circulation; and some of the believers in this theory have, of late years, bled their trees by driving spikes into the trunks, or administered to the suffering trees certain medicines near the base of the trunk, professedly to purge them of noxious and destructive humors by the remedial effect which might be imparted to the sap as it flowed to every part. Favorable reports have been published of these experiments, but I do not think any certain, well established theory of the cause of the cherry tree disease has been discovered.

Hon. S. L. Goodale, former Secretary of the Board of Agriculture, in a paper on Fruit Culture in his report for the year 1864, page 138, says: "The Kentish cherry, common throughout New England, and generally called *tame* to distinguish it from the sorts which grow wild among our forest trees, was formerly very plenty through the State. It proved hardy and bore abundantly. But of late years the stock has become diseased from some cause, and having been usually propagated by suckers which carried the tendency to disease with them, it is now grown with less success than formerly, and in some sections has become extinct." The foregoing quotation does not pretend to contain any explanation of the original cause of the cherry tree blight, but contains a warning hint against the practice of planting diseased suckers for the purpose of obtaining healthy, productive trees.

It will be noticed that only the old Kentish, or common "tame cherry," is mentioned as suffering from this disease; the newer and better kinds being presumably free from it. In fact, I do not remember of seeing any of the Heart or Bigarreau cherry trees which had the black knot upon them. Whether the Dukes or Morellos, from their nearer resemblance to the late Kentish, have or will ever develop the same disease, I am not able to say from observation. Mr. Francis H. Whitman of Harrison, who is a cherry fancier and cultivates several varieties of the Hearts, says he has not noticed in his trees any signs of the black knot, and it is his opinion that the improved kinds of cherries obtained from nurseries and well planted and attended to, will be very profitable and free from disease. If it is true that this disease is confined to the old Kentish cherry tree, and has not appeared in any of the newer sorts, it is sufficient cause for thankfulness among fruit-growers and lovers of cherries that such a discovery has been made, and the best thing that could happen in that event would be

to let the old, diseased tame cherry trees die and cut them up by the roots, and plant out large numbers of the best new sorts.

In my researches for information relating to the black knot on cherry trees, I have found several modes of prevention and cure recommended, but only one writer pretends to give a hint of the source of the disease, or prescribes any remedy for its prevention or radical cure. I find in the *Fruit Recorder* for August, 1872, a short article purporting to be a conversation between a gentleman and a lady, in whose garden he had noticed black knots on the plum trees. In reply to a suggestion that it was caused by a "fly puncturing the bark and laying its eggs inside," &c., he says: "No, it is not that. It is a plant, a black plant of the fungus family, preying upon the tree and sucking the life out of it. What is smut in our corn, rust on our wheat fields, is black knot on our plum trees. And it kills great numbers. The seeds of it float in the air. When a good chance offers, they lodge on the limbs of some favorite tree and stick to it, take root, spread and grow, and spread until they become the unsightly things called '*Black Knot*.' People try to cut it off with a sharp knife, but it is of no use. It will kill the tree, and nothing can stop its work of ruin. * * * But there is a prevention. Potash in the soil will make a glassy coating on the straw of wheat and the stems of the trees, which hardens them against the attacks of the fungi. It is as much as says to the bad seeds floating around and trying to find a place to stop, 'No you don't; we don't allow any soft or weak spots for you to get hold of!'"

A correspondent of the *Massachusetts Ploughman*, under date of March 4, 1871, says of the black knot on plum trees: "Cut them off immediately; they will spread all over the tree if left. I have a nice row of cherry trees. Three years ago a few black knots appeared on the limbs. I intended to cut them off, but neglected to do so, and the following spring the tree was covered (nearly) with them; also many appeared on the tree next to it. The tree never leaved out again, but it is now dead. I cut off everything that showed signs of black knots from the row, and I think they are saved. I cut open several of the knots and found them filled with small worms or grubs. I think they are as dangerous to a plum or cherry orchard as epizootic aptha is to cattle. Brother farmers, be sure to cut them all off and burn them."

I also notice a brief prescription for the cure of black knots, credited to the *Canada Farmer*, as follows: "Take a paint brush,

dip it in spirits of turpentine and thoroughly saturate the knot, being careful not to touch the tree except in the diseased part. It stops the knot, and the tree puts out healthy branches below it. I am careful to burn all branches removed in pruning. As the summer is the time the mischief is done, every fresh excrescence should be pared off, the turpentine applied, and it will harden in a week." I will add the testimony of my own experience as to the efficacy of the pruning off of all appearances of black knot; and in practising this from year to year, I have preserved several of the Late Kentish trees from destruction, and they have, nearly every year during the last fifteen, borne fair crops of fruit.

While engaged in the preparation of this paper and seeking for information respecting the cause of black knot, I became incidentally much interested in the perusal of a series of articles published in the *Boston Cultivator*, over the signature of Lyman Reed, on the subject of the potato rot, in which the writer with much energy, and as I think, successfully, refutes the old and apparently well settled theory that *fungus* is the cause of that disease. In his summing up of the case he states several facts and reasons for believing the old theory to be wrong, two of which are as follows:

"That larvæ of insects are the original cause of the potato rot."

"*That the potato fungus is a sequence, and not a cause.*"

The suggestion at once flashed to my mind whether this discovery, made and completed through many years of patient investigation under varying circumstances, with the best aids which science has provided, might not afford a clue to the cause of the cherry tree disease; for, as I reasoned, "if the potato fungus is a *sequence* rather than a *cause*, why not the fungi upon our cherry trees?" Acting upon this suggestion, in pursuance of my inquiries, I addressed a letter to Mr. Reed at Boston, asking him if he had ever given any attention to microscopic or other investigations of the cause of the black knot in cherry trees, and if so to describe the result of such methods of investigation. I have much pleasure in submitting herewith his reply; and I will say, although I have in previous pages stated the opinion that "no true diagnosis of this disease has ever been obtained," I am since constrained to admit the conviction that Mr. Reed's discoveries in this direction point to the *real cause* of the decline and failure of cherry culture in many parts of our country.

LETTER OF HON. LYMAN REED.

QUINCY HALL. }
Boston, January 26, 1876. }

DEAR SIR:—I take pleasure in acknowledging the receipt of your valued letter of the 24th inst. In answer, I have to say that I have never made fruit trees a subject of special investigation. I have, from incidental observation, however, some *facts* procured from microscopic research, which have satisfied me that the black knot and the fungus so often found about the branches and the fruit on plum and cherry trees, invariably results from the attack and ravages of insects, many of which, in the larvæ, are entirely microscopic—hence the injury which they produce is so difficult to be accurately and *definitely traced*. The microscope is *too little employed* by agriculturists and horticulturists. Those not accustomed to its use know nothing of the truly wonderful developments which are continually working, in secret, in the various tissues of vegetation, shrubbery and fruit trees. Nearly every vegetable, grain or grass, as also shrubbery and trees, are inhabited by some kind of entomological parasite. My investigations and microscopic researches have been confined almost exclusively to the potato, and to trace out the habits, transformations and general history of the insect. I will explain to you, however, what has incidentally been observed about fruit.

In 1839, I occupied a place in Baltimore (suburb of the city), Maryland. It was an old estate, well stocked with fruit trees. Among them were choice varieties of plums; but the trees were young (8 or 10 years' growth), and bore an abundance of beautiful fruit, *and all sound*. The bark of these trees was smooth and free from moss. After a residence in Massachusetts for a number of years, where I made the discovery of insects about the roots of potato vines, I resided again in Baltimore and occupied the same place referred to above. The luxuriant plum trees of 1839 had, in 20 years, become moss-grown, with black knots and warts; still they were filled profusely with blossoms each year, and the early part of the season the fruit grew rapidly; but as the plums began to ripen they were *uniformly covered with fungus* (white mould). My previous microscopic researches in Massachusetts, (Waltham), induced me to examine those trees. My first attention was fastened to an unusual appearance about *all the branches*, at the joints of each year's growth.

Each joint was covered with a ring of small warts, 8 to 10 in number, encircling every branch—the size about the head of a small tack. The warts about the joints of previous years were tenantless, but the joint at the commencement of the new wood or growth, where the plums were hanging, were firm and tightly closed. By cutting open these warts, the center exhibited to the natural vision a minute, white speck. Upon a microscopic examination of the dissected wart, I found and counted distinctly from 20 to 40 living, microscopic larvæ insects in each half wart, as it lay under the focus of the instrument. Thus was revealed to me an army of secret depredators. They were living upon the sap, and their presence, from their attack or by emanation from their bodies, conveyed a virus to the growing fruit; and thus the poison infused by the insects, passed by exhalation to the surface of the plum, producing the mould or fungus. These larvæ remained in these warts through the season,

and there hibernated through the winter. On the 12th of January—thermometer 16° below freezing, ground covered with snow—at sunrise, I took some limbs from those trees, and in the house examined the interior of these warts with the microscope. The insects were dormant, their legs and antennæ curled up, having the appearance of a cluster of eggs. I left them before the fire and the influence of the sun, during my breakfast. On returning in half an hour the warmth had re-animated the insects. The next spring they transformed, left the warts, and constructed a new ring of warts with eggs in them.

Yours very respectfully,

LYMAN REED."

INSECT ENEMIES.

Of predaceous insects injurious to the cherry, I know but two whose operations are observable to the unaided vision. The common green aphid, which infests alike the rapid growing, succulent shoots of the apple and cherry tree, covering the leaves in great numbers, causes a discoloration of the foliage and a sort of blight and arrest of growth. I have observed that late in the season the extremities of the young branches sometimes appear to be dried up and dead, and a portion of the same branches fail to put out new leaves the following year. I think the operations of the aphides are detrimental to the health and growth of the tree. It is evident that they extract a considerable portion of the sap which the vital forces cause to flow abundantly to the extremities of the branches, and which also attracts the black ant. I once supposed the ant was the enemy of the aphides, but have not discovered any facts to verify this supposition; and I think the ant is as great a lover of the juice obtained from the soft shoots as the aphides.

Cole says the aphides "are of different colors, as green, brown, blue, black, red, crimson; of various sizes, from that of a mite to the bigness of a pear-bug; naked, or clothed in a woolly or furzy covering. As they multiply with astonishing rapidity, they should be destroyed as they make their appearance." Whale oil soap, soap suds, or tobacco water, are recommended for destroying the aphid. The usual proportion of whale oil soap is 1 pound to about 7 gallons of water. A noted French horticulturist is reported to have recently made the discovery that the yellowish, strong smelling excretion of tomato leaves is poisonous to plant aphides, and quite as effectual in destroying them as tobacco water. The leaves are macerated in water, and the water used for sprinkling or immersion of the infested plants. It would be very convenient to bend the tip of a cherry or apple tree limb downward and immerse

it thoroughly, giving the aphides a quieting bath. The lady bird or lady bug, and a green fly, are said to be natural enemies of the aphids.

The Rose bug, known for a long time in Massachusetts and the southern portions of New England, has appeared in some gardens in this State within a few years past, and from the manner of their annual advent and the alarming nature of their operations, I apprehend serious disaster to our fruit interests unless some effectual remedy for this scourge is discovered. Harris says: "They attack at random various kinds of plants in swarms, and have become notorious for their extensive and deplorable ravages. The grape vine in particular, the cherry, plum and apple trees, have annually suffered by their depredations; many other fruit trees and shrubs, garden vegetables and corn, and even the forest trees and grass of the field, have been laid under contribution by these indiscriminate feeders."

Two years ago I became quite alarmed at observing great numbers in my garden, devouring the leaves upon young apple, cherry and plum trees, and vines. Writers on this subject concur in pronouncing the Rose Bug the greatest pest that the fruit grower has to contend with, as they often come in swarms, destroying both foliage and fruit of almost every description. From three to six weeks is the average period of their devastations, commencing about the second week in June. Ashes, plaster, lime and some other common insect remedies, will not destroy them. They are easily caught in the morning or in a dull day, on the leaves—will generally be found in pairs, and a dish of strong soap suds in hand to gather them in is a convenient and sure method of closing up their forage accounts. I am not aware that serious injury of a permanent character has resulted from their operations.

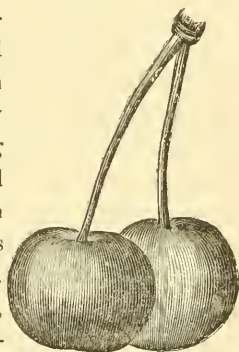
VARIETIES SUITED TO MAINE.

In selecting varieties of cherries for the garden, one should be governed first, second and last, by an intelligent judgment of his needs. A cherry that is good and profitable for family use, would be equally good and profitable to raise for market. What qualities do we want in this fruit? First, hardiness with thrifty growth; second, such as will suit the average taste, for while some persons prefer the sweet kinds, others would rather have the acid; third and last, we want prolific varieties so that we may in-

dulge our appetites for this luxury, and have plenty to share with our friends or to sell in market.

In examining the lists of fruits in the various fruit-books, I find some authors have catalogued over 100 kinds of cherries known in this country, but of this great number there are few which it would be advisable to adopt for cultivation in any particular locality. There are certain kinds which from their hardiness, great productiveness and excellent quality, are very desirable for all gardens.

Downing says: "The hardiest cherries are the Kentish (or Virginia May), the Dukes and Morellos. These succeed well at the farthest limits, both North and South, in which the cherry can be raised, and when all other varieties fail they may be depended on for regular crops. Next to these in this respect, are the Black Heart, Downer's Late, Early Purple Guigne, and Elton." Of the Kentish he says: "The true Kentish cherry, an old European sort, better known here as the Early Richmond, is one of the most valuable of the acid cherries. It begins to color about the 20th of May (latitude of New Jersey), and may then be used for tarts; while it will hang upon the tree, gradually growing larger and losing its acidity, until the last of June, or in dry seasons even until July, when it becomes of a rich, sprightly and excellent acid flavor. The tree grows about eighteen feet high, with a roundish, spreading head; is exceedingly productive, and is, from its early maturity, a very profitable market fruit, being largely planted for this purpose in New Jersey."



Early Richmond.

Next to the Kentish or Early Richmond, is the Mayduke. I quote from the same author: "This invaluable early cherry is one of the most popular sorts in all countries, thriving almost equally well in cold or warm climates. This, the Black Heart and the Bigarreau, are the most extensively diffused of all the finer varieties in the United States. And among all the new varieties none has been found to supplant the Mayduke. Before it is fit for table use it is admirably adapted for cooking; and when ripe it is, perhaps, the richest of all the sub-acid cherries." * * * "It begins to color, about New York, in favorable seasons—the last of May—and ripens during the first half of June." This variety has a peculiar habit of ripening some of its fruit much later than the other,

thus protracting for a long time the period of fruit, which quality, with its remarkably fine style of growth, should recommend it to every tree-planter.

Mr. Goodale, in his report for 1864, already referred to, recommends for cultivation in Maine, the following varieties: Of the Duke cherries, the Mayduke, Reine Hortense, Belle Magnifique and Belle de Choisy. Of the Heart and Bigarreau varieties, the Black Eagle, Coe's Transparent, Elton, Napoleon and White Bigarreau.

It is a noticeable fact that during the last ten years, in all the treatises which have been read, and lengthy discussions which have occurred in the Board of Agriculture on the subject of fruit and its cultivation, no allusion is found to the cherry as a fruit worthy of cultivation in Maine, excepting two or three brief notices by the Secretary of the Board.

The committee of this Society, whose report on a catalogue of fruits for Maine was published in the Society's transactions for 1874, have recommended a list of 12 varieties of cherries. It will be noticed that this list does not include certain varieties which had been previously recommended for cultivation by some of our leading writers on fruits adapted to our State. Doubtless a careful experience with some of the kinds recommended in former years, with close observation of their adaptability to our climate, or some other sufficient reason, caused a modification of the judgment of the committee regarding the kinds best suited to the climate and general conditions of soil and culture. This fact is mentioned as evidence of the liability we risk of changing our judgments and preferences, and illustrates the force of the apostolic injunction to "prove all things and hold fast to that which is good."

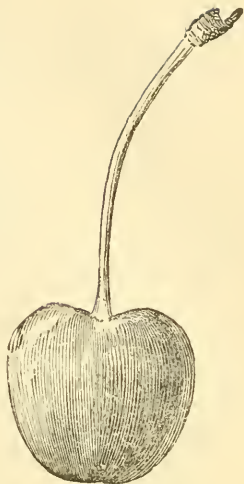
The unexpected length to which this essay has extended, admonishes me to draw towards a conclusion as speedily as possible. In connection with the subject of "What kinds of cherries to plant," I append a brief synopsis of the character of the several kinds heretofore included in the Society's catalogue:

1. *Belle de Choisy*. Rather early, sub-acid, moderately productive, but needs good cultivation.—*Thomas*.

2. *Black Heart*. An old variety, better known than almost any cherry in the country; hardy, good flavor, very productive; tree grows to a large size. Fruit above medium; skin glossy, dark purple; deep black when fully ripe. Flesh tender and juicy, with

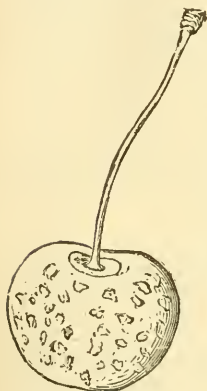
a rich, sweet flavor. Ripens last of June—ten days after the Mayduke.—*Downing.*

3. *Black Tartarian.* Superb; a general favorite; in size, flavor and productiveness it has no superior among black cherries. Origin, Russia or West Asia. Remarkable for its vigorous growth, large leaves, and erect habit of its head. Ripens about the middle of June. Skin glossy, bright, purplish black. Flesh very rich and delicious.—*Downing.*



Black Tartarian.

4. *Coe's Transparent.* Fruit medium size; skin thin, very delicate pale amber, nearly covered with pale cornelian in the sun. Flesh very tender, melting and juicy; sweet and excellent; productive, but rather tender for carriage to market.—*Downing.* A. M. Purdy says this cherry is "the best of all."



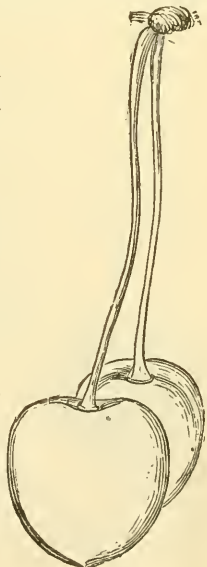
Coe's Transparent.

6. *Elton.* Fruit of large size, early maturity, beautiful appearance, luscious flavor; productive; universally esteemed. Tree vigorous. Ripens about the middle of June.—*Downing.*

7. *Late Duke.* Fruit very large and fine; ripens a month later than Mayduke; valuable for dessert or cooking. Color, rich dark red; flesh tender, juicy; sprightly sub-acid flavor; tree vigorous.—*Downing.*

8. *Louis Phillippe.* Fruit medium, roundish, dark red; flesh red, juicy, tender acid; ripens middle of July. A Duke according to some authors, but Downing classes it with the Morellos, with Elliott as his authority.

9. *May Duke.* Description already given.



Elton.

10. *Morrello*. A fine fruit; valuable for preserves; good for the dessert; large size, round, heart shaped; skin dark red, nearly black when ripe; flesh tender, juicy, pleasant sub-acid; ripe 20th of July.—*Downing*.

11. *Napoleon*. One of the finest of the Bigarreaus; large, well flavored, handsome and productive; skin pale yellow, amber in the shade, richly dotted with very deep red, and with a fine marbled, dark crimson cheek. Flesh very firm, juicy, excellent flavor. Ripens about July 1st.

12. *Reine Hortense*. Tree a healthy, handsome grower, productive; very desirable. Fruit very large, roundish, elongated. Skin bright red, somewhat mottled. Flesh tender, juicy, very slightly sub-acid and delicious. Ripe from middle to last of July.—*Downing*.

I have had fruit of this variety for several years past, and although it has not borne any large crops—probably for want of age—it is the finest cherry I ever tasted. So say all.

I wish to attest to the good qualities of certain varieties of which I have specimen trees now growing, from which I have had fruit:



Early Purple Guigne. This is a very early variety, ripening about June 25th in Maine. Tree hardy, free grower; fruit medium in size, heart shaped, dark red; purple when ripe. Flesh purple, tender, juicy, rich and sweet. Downing says it is a good bearer, and indispensable among the early varieties.

Governor Wood. Originated by Prof. Kirtland, at Cleaveland, Ohio; one of the best. Tree vigorous, forming a regular head; very productive.—*Downing*.

I am acquainted with this cherry, and believe it to be a very valuable variety.

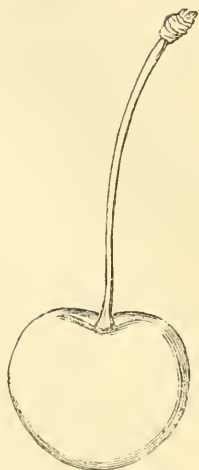
Cleaveland Bigarreau. This is a remarkably Early Purple Guigne thrifty grower, having exceeded in growth all the trees in my collection of about twenty varieties. Fruit large and fine; flesh juicy, rich, sweet. Ripe in June.

Belle Magnifique. Tree hardy, moderately vigorous, productive; a beautiful and excellent late variety—culinary—good for table when ripe. Flesh juicy. Ripens from middle of July to middle of August.—*Downing.*

In this latitude it often remains on the tree until September, as I have plucked ripe cherries several times in that month.

I have other kinds which have not borne fruit, but judging from the hardiness and thriftiness of the trees, I live in a condition of ardent hopefulness regarding future results of present care and management.

My trees are in a garden soil, not over rich, but in condition to produce a good crop of corn, —on high, dry soil, shallow, with a very hard, rocky subsoil.



Belle Magnifique.

PROFITS OF CHERRY CULTURE FOR MARKET.

Although there is much satisfaction in watching the growth of young trees, in pruning and giving shapely direction to the branches, in beholding the first snowy blossoms, and in tasting the first specimens of ripe fruit, there are probably few of us who do not many times, while patiently waiting on the annual reproduction of leaves and watching the upward tendency and expansion of our favorite trees, mentally estimate the amount of returns we are likely to receive, in cash, for all these years of work, watching and expectation. This, in fact, is a serious consideration in the case of him, who, stimulated by his enthusiastic temperament and passion for fruit culture, has stinted himself to a point of almost meanness, and out of his enforced self-denial has found himself in possession of a few choice kinds of trees, with only a meagre knowledge of their proper treatment, and experiencing continually the alternate hopes and doubts which are generally characteristic of sanguine natures.

I have, within a few years past, become acquainted with some instances of remarkable productiveness of the Black Heart cherry. One was that of a tree belonging to Mr. Stephen Lord of Hallo-well, which was mentioned in an editorial note in the *Maine Farmer* for July 26, 1873. This tree, of mature growth, was reported to have produced in one year, and for many years in succession, six

bushels of cherries, which one year were sold at the rate of \$7.00 per bushel. Another instance is of a small fruit garden in Portland, belonging to Mr. Geo. W. Rich, from which, as the product of not over five trees of moderate size, were sold about two years since \$30.00 worth, besides considerable quantities used by the family and given to friends. Mr. Rich sold his cherries for thirty cents per quart in the Portland market.

A correspondent of the *Country Gentleman*, describing a visit among the orchards of the noted horticulturist, Dr. E. S. Hull, (since deceased), near Alton, Ill., in 1871, writes: "Cherries had borne in great abundance, and \$800 worth met quick sale in Chicago at from \$3.50 to \$5 per box of less than one-third bushel." This too, when the Chicago market was doubtless flooded with cheap strawberries and other small fruits.

I cite these as cases incidentally coming to my notice; doubtless they are examples of hundreds similar. From the fact that the cultivation of this fruit has of late years become a success in Massachusetts, and that it generally commands a high price in the markets of Boston and other New England cities, I believe it will not require a great expenditure of money or labor to enable any prudent fruit culturist to solve the momentous question, "will it pay?"

The cherry, being of a perishable nature, is regarded by many as an unsafe fruit for shipping purposes. This objection, though an important one at first thought, is not so formidable as it seems when we remember that strawberries, raspberries, blackberries, currants, blueberries, grapes, and other short-lived fruits, are every year shipped hundreds of miles by railroad and steamer. During the last year strawberries and raspberries were sent by steamer to the Boston market from Eastern Maine and Nova Scotia, and arrived in fine condition, and were reported in an editorial article in the *Boston Cultivator* to be the best fruit of those kinds seen in that market for the season, bringing the highest prices. I have had no experience in shipping cherries to distant markets, but I have no doubt, with proper care in packing, they may be sent 500 miles by steamer, and probably by rail, without injury. Besides, there is a good local market in every village in Maine for many bushels of this fruit at remunerative prices, and according to my observation of the demand for this and other summer fruits in any of our manufacturing centers, a man has but to show his fruit, if it is of decent quality, and the boxes of fruit speedily

disappear from his wagon at a round price, with cash in hand. The demand for superior fruits of all kinds has within the past decade increased to a remarkable extent. I will not instance the exorbitant rates often paid for specimens of fruit produced by artificial forcing, months or weeks before their natural season; but I refer my auditors to the testimony of fruit dealers and consumers in the city, that nice, large fruit in its proper season always bears a paying price, while small-sized, unripe fruit of all kinds has to go begging for customers.

But I will not pursue this reasoning further. If I have appeared to exhibit any undue prejudice in favor of the subject of my essay, I trust no one will suppose I desire to advocate a heedless rushing into, or even the deliberate adoption of, any enterprise which may not be practically beneficial to my brother farmers.

SMALL FRUITS, AND THEIR CULTURE.

BY LYMAN F. ABBOTT, OF WILTON.

A few years since, small fruit culture as a distinct branch of horticulture, was unknown. Indeed, it is but very recently that, even in the vicinity of our cities and larger villages, small fruits have been cultivated as a source of profit. In former years there were a few men that "went berrying," and from their success others caught the enthusiasm and roamed the fields of horticulture till a demand has been created for the luscious, perishable small fruits, that in most localities far exceeds the supply. I presume there are localities where in some seasons the markets are overstocked with certain fruits, as strawberries and blackberries, and in consequence the price at such times is crowded down to a low figure and the profits are correspondingly small; but here in Maine I have yet to learn of any such instance when, taking the season through, the demand and price have not both been good.

And while this branch of agriculture may be made a specialty and realize good profits from the labor and capital invested, especially by those living on the lines of railroads or near our cities and larger towns, it offers to the farmer the means of supplying his family with palatable and wholesome fruits which are peculiarly desirable at a season when that derived from the orchard is immature.

We don't know whether our good old ancestors in their primeval estate cultivated small fruits with their apple orchard or not, but it is painfully evident that as a class we have wofully fallen from

grace by some means, till an awakening is sadly needed to teach us that there is a wide difference in the gastronomical tenet which embraces the trinity of bacon, bread and potatoes—so tenaciously adhered to by many—and the new dispensation that has dawned upon us in the advent of the gospel of dietetics, that embraces the horticultural dogma of a fruit diet as tending to the development of the christian virtues, through the medium of a good digestion.

Those who have been among our farmers need not be told that the leaven of this new dispensation has scarcely any visible effect, for how few make any provision whatever for a supply of the small fruits for family use, other than what is procured by their wives and children from the scanty supply afforded by the fields and pastures. It is evident if farmers would add a few extra rods of land to their gardens, and set the same to strawberry, raspberry and blackberry plants, and let their wives and children spend a moiety of the time in cultivating them (which they would cheerfully do) which is lost in roaming the fields and pastures in quest of wild berries, they would be greatly the gainers, to say nothing of weary steps and torn clothes.

To the mechanic, who lives in the suburbs of the city and accomplishes his ten hours of labor at the bench, anvil, or in the factory, if he owns a few rods of land the cultivation of the small fruits gives him better returns for his labor, aside from their dietetic value when used in his family, than anything to which he can appropriate his land. And to such the labor bestowed is a recreation, a diversion of the mind from the cares incident to the toil of the shop and factory. There cannot well be a greater pleasure than that which may be enjoyed by the tiller of the soil, in this miniature field of operation. And the enjoyment one takes in watching from day to day the progress of this little world of vegetation under his care, is no small consideration.

When it is considered how easily most of these fruits are raised; how great the certainty of the crop; how well they are adapted to the smallest garden, and above all, the great hardiness of most of them, it is certainly surprising that they have not received more attention. Unlike the large fruits, they do not require a great amount of room to grow, nor a long time to arrive at a bearing age. Another consideration is their hardiness. The trying nature of our northern climate often injures hundreds of our fruit trees. From this cause our apple and pear trees often fail to pro-

duce a crop of fruit. So climatic influences may destroy our crop of cherries. Still, if all the above fail we can have a crop of strawberries. If our cherries are cut off by cold or insects, we can still have a good supply of currants and blackberries. And although the season of the small fruits was formerly limited to a few weeks or months of the warm season, by the process of canning we are enabled in a measure to extend their time even through the winter.

If what we have stated is correct, and we think we have not overdrawn the account, the small fruits are hereafter to hold a more prominent place in our gardens and to receive much more attention in their cultivation. Like the larger fruits, they need but well-directed care and proper attention to render them as much superior to our common garden products as the pear and apple are superior for the increased care and skill devoted to their growth.

TO MAKE IT PAY

as a business, requires experience, and those who know little or nothing about growing small fruits should invest sparingly till experience has taught them how to proceed and make it pay. Success depends much on rich soil and thorough cultivation. There are many things to be considered at the outset, things that the man who has an eye for business will take into account beforehand. Some of these are nearness to a good market, facilities for obtaining a supply of dressing for his land, and not least, the amount of help at command within his own household.

There are, then, two classes of individuals that will be likely to succeed in growing small fruits for market. The man with capital, who is able in a measure to overcome untoward circumstances, and the man who by personal supervision and good management makes brains subserve the place of capital. The farmer, by doing a large business, if he realizes but a small percentage of profit, in the aggregate it amounts to a considerable sum; whereas, his neighbor, without capital to rely upon, is unable to compete with such prices as give the extensive producer a margin of profit. But the man who relies upon a home market, and who confines his operations within the limits of his own household for the requisite labor to carry on his operations, and works in the field himself, will make the raising of small fruits profitable, inasmuch as he receives an immediate return for his labor; and many small outgoes that in the aggregate amount to quite a sum can be saved, which

otherwise would go to the other side of the account were the management entrusted to outside help. And this leads us to say a word about culture.

It must be borne in mind that no slipshod cultivation will do for small fruits if anything like good results are expected to be realized. By bestowing the best care, the returns we obtain are not only much better, but they will be in an increased ratio to the amount of cultivation given. No one should be content with giving merely *good* culture, for his profits will be so much greater by giving *extra* dressing and bestowing *extra* labor. This applies to all varieties of which mention is made in this paper, but with more force, perhaps, to some varieties than to others; as, for instance, the same culture and richness of soil is not required for the blackberry as for the strawberry. While the latter will bear any amount of pampering, the former would, with like treatment, run to an inordinate amount of wood at the expense of fruit. And another lesson is indicated by this. The peculiar requirements of each variety grown should be studied so that the best mode of cultivation may be known and carried into practice. Like many other things that require a right beginning to reach a successful consummation, we need to lay the foundation well. No superstructure of granite can stand upon a quicksand foundation, neither can we attain success and keep abreast in the race in this age of improvement, unless we study well and diligently and conform our practice to nature's laws and requirements.

In this paper we propose to consider somewhat in detail the culture of the strawberry, raspberry, blackberry, gooseberry and currant; these five varieties of small fruits being the ones best adapted to our climate, and with the habits and requirements of which we are best acquainted, so without further preface I will invite you to direct your attention towards my strawberry bed.

CULTURE OF THE STRAWBERRY.

Omitting technical terms and much relating merely to the natural history of the plants under consideration, we will confine what we have to say mainly to the practical part of their culture. The soil best adapted to the culture of the strawberry is a deep, rich loam, slightly tenacious, and inclining somewhat to a sandy loam, or at least containing more or less sand in its composition. Any good garden soil, or land adapted to the growth of corn and potatoes, is good for the strawberry. Richness and depth are essentials not

to be omitted if the best results would be realized. I need not tell those that are experienced in raising strawberries, that manure and thorough cultivation are the foundation of success in growing this fruit. As we have intimated, it is all the better if the soil is inclined to be moist, but stagnant water in any form is an evil that must not be tolerated. Some varieties will produce good crops on land in such heart that another would nearly fail. For instance, the Green Prolific will bear a fair crop on land that the Wilson's Albany would fail entirely on; but the former is as susceptible to good treatment as any.

The best manurial agent to be employed in the preparation of the strawberry patch is a compost of manure and leaf mold,—the manure to be at least one year old. A spoonful of superphosphate scattered about each plant at the time of setting, will give them a good start. But almost any fertilizer will be appropriated by this plant. Ashes are very beneficial, applied at any time after the plants are set.

The usual method of planting is to make the rows three feet apart, with plants a foot apart in the row. The runners, as fast as they appear, are cut off and the ground hoed and cultivated to keep the soil light and the weeds down. Two crops may be taken, after which it is better to plow the vines under and cultivate to some other crop for two years or more, when it may be suitably enriched and planted to strawberries again. The neatest system by far, and the one to be recommended for garden culture or on land liable to be weedy, is what is termed the *annual* system. By this plan the plants are set early in the spring, a full crop is realized the next year, when the plants are plowed under—a bed in the meantime having been set for the next year's supply. By this system the weeds are prevented from getting a foothold, and on the whole the labor and returns—unless the land is pretty clear from weeds—about as profitable as by any other.

Too little attention is paid to the selection of plants for setting out a bed, and also to the work of setting them. All old and weak plants should be discarded. If the plantation has to be set every year, or two years even, we cannot afford to set poor plants or do the work improperly. Let us take measures to secure as large a crop as possible. The best plants for setting are the strongest plants of last year's growth. They are readily known by their roots, which are a bright yellow color, while the roots of old plants are black. The plants should never be pulled up until loosened

with the spade or trowel, to prevent injuring the roots. If the roots are long they may be shortened half their length without injury. Indeed, this shortening of the roots is a positive benefit in causing small, fibrous roots to be emitted nearer the crown of the plant; also, the work of setting is facilitated thereby. It may seem a very simple process to set out so insignificant a thing as a little strawberry plant, and so it is; but it makes a very great difference in the yield whether the roots of the plants are jammed in together in a small hole, or spread out carefully as they grew. We think it well to make quite a depression in marking out the rows, then, after the plants are set and the ground levelled over; the plants will be slightly depressed and less liable to have their roots disturbed or brought too near the surface by frequent cultivation. Having marked out the rows, the plants may be taken, several at a time, in the hand and the roots clipped, and the plants deposited in a pail partly filled with water, with a little earth added sufficient to make quite a thick *puddle*.

Those that have observed the habits of the growing plants will have noticed that the roots do not extend vertically into the soil, but spread out nearer the surface. To imitate a natural position we raise a little mound in the shallow trench, and on this set the plant, spreading out the roots on all sides, the earth readily adheres to the wet roots; and if the soil is thoroughly packed about the roots, and if we have chosen a cloudy day for setting, there is not much danger of losing a single plant. It is well to remove all superfluous leaves from the plants when lifted, leaving but one or two in the center of the crown. They should be faithfully cultivated and hoed during the summer, the runners removed at each hoeing, and oftener if necessary. To keep the runners back will require persistent watching and labor.

WINTER PROTECTION

is essential to grow strawberries in Maine. There is no better protection than snow; but this cannot always be relied upon, for even in the best positions in winters like the present, we shall find our strawberry plants exposed to the vicissitudes of the weather, and frequently thawed and frozen. To obviate this difficulty it is essential to use some material for a covering in the fall, and this will serve the double purpose of a winter protection to the plants and a protection to the fruit the coming season from grit and dirt. For this purpose forest leaves, with leaf mold, or straw, or swale

hay may be used. The straw will be better adapted to the purpose if run through a cutter. But whatever material is used, it should cover both the plants and the ground between the rows, although the plants should be covered somewhat sparingly. In the spring remove the covering from the crown of the plants, leaving the ground well covered between the rows and about the plants to insure clean fruit, and also to serve as a protection from drought.

It is the commonly received opinion that strawberries should not be cultivated after the fruit has set; but we are well established in the belief that if shallow culture is given, taking precaution to keep the fruit clean, such culture is highly beneficial if continued nearly to the time of the turning of the fruit. The strawberry in its wild state produces perfect flowers, that is, flowers possessing both stamens and pistils; but by cultivation many varieties are produced that bear flowers that are imperfect. Hence, we have those varieties designated as staminate (male), or pistillate (female), the former perfect or fruit-bearing flowers in themselves; the latter, abortive and non-productive without fertilization by the pollen from the staminate plants. Hence, understanding this sexual character of the strawberry, it is well to have a small proportion of the plants of the staminate variety to insure the full fertilization of all the plants.

VARIETIES TO PLANT.

In regard to varieties there is a great difference of opinion. Taking everything into consideration, hardiness, bearing qualities, appearance and hardness of fruit, thus bearing transportation well, we know of none superior to *Wilson's Albany*. *Green Prolific* is good, also *Hovey's Seedling*. There are many others highly recommended; of these the *Col. Cheney* is said to be as good if not superior to *Wilson's Albany*; but of the adaptedness of these other varieties to our climate, we cannot speak from personal knowledge.

Perhaps we have lingered quite long enough around this strawberry bed; let us now turn our attention to

THE GOOSEBERRY AND CURRANT

plantation. If one lives somewhat remote from market, there is (or perhaps we ought to say was), none of the small fruits that offer better returns than this same sour gooseberry. The plants

are perfectly winter proof, the fruit is never less by being stolen, bears transportation as well as the cranberry, comes into bearing early, say in three years, and holds out indefinitely, and the fruit always commands a good price in market. But are there no drawbacks to be encountered? Ah, yes, there is one. And to overcome it we have experimented not a little. It isn't mildew—once the bane of the gooseberry grower, that we avoid by good culture and the selection of varieties, but it is that little imported scourge, the gooseberry *nematus*. But after all, we do not cultivate without hope, as the last prescription we have tried laid the rascal low in a trice. This remedy is no other than a strong decoction of poke root, (white helebore), applied to the foliage as soon as the worms make their appearance, when a troubled digestion soon spoils a voracious appetite.

The currant and gooseberry are vigorous growers, and of course need large supplies of food. Their roots are small and fibrous, so dressing needs to be applied directly, generously, and at least annually. Any well rotted manure will be found beneficial, but a compost formed of forest leaves, swamp muck, rotten wood, gypsum and wood ashes, well decomposed and mixed, and cultivated in about the roots "will tell" the best results. There is not much danger of manuring too high, especially for currants. The roots grow in small compass, and unless they are supplied with plenty of food, and the ground kept light and mellow and free from weeds and grass, the fruit will be small no matter what the variety may be. In starting a plantation of these fruits we purchase plants from the nursery, costing about six cents each. These are cuttings well rooted in the nursery. After the ground is prepared, it is marked off both ways in rows four feet apart, setting the plants where the lines intersect. They should be set so that when the soil is nicely packed about the roots the plants will set a little lower than the surrounding surface. They should be hoed frequently to loosen the soil and keep down the weeds. To guard against the great heat of summer it is beneficial to mulch gooseberries with chip manure or tan bark to keep the ground cool and moist.

The same system of pruning applies to both the currant and gooseberry, which consists in cutting out the old wood occasionally and shortening in the new. The fruit is borne mostly on wood after two years old, so when wood has produced two or three years it is better to cut it out and induce the growth of new

wood. This pruning of the currant has other good results in destroying the larvæ of the currant borer that will be found to infest the bushes more or less. Let this pruning be done in fall or early spring, carefully burning all the canes cut out.

The gooseberry saw-fly attacks both the currant and gooseberry, and in such numbers that unless measures are taken to destroy them as soon as they appear, the bushes are speedily defoliated. The best means for the destruction of these insects is to thoroughly wet the leaves with water in which poke root has been soaked for a time. This is the most efficacious of anything we have tried.

The varieties of currants have greatly increased of late years, but whether much improvement has been made over the old sorts there is some doubt. On looking over a list of small fruits I find some twenty-five varieties of currants mentioned. The *Cherry* takes the lead in size. A new French variety is extolled by those having plants to sell, but we believe it would puzzle even a Frenchman to discover the difference between it and the *Cherry*. We don't give up the old *Red Dutch*, believing it to be as good a flavored currant as any cultivated. Besides that, it ripens early, never fails of a crop, and is a vigorous grower. The *White Dutch* is an old but good variety. The *Black English*, *Black Naples*, and *Yellow-Fruited Black*, are among the best black currants, and similar in habit, size and growth.

Of gooseberries, *Houghton's Seedling* has been our choice, although the *American Seedling* is a more upright grower, and bears larger fruit. These two, with the *Mountain Seedling*, are varieties that will be found free from mildew. The *Houghton Seedling* is of a trailing habit, and requires some care in mulching to keep the fruit from the ground. After the plants are well established they will produce from sixteen to twenty-five quarts each.

THE RASPBERRY AND BLACKBERRY

are so nearly allied that the same culture will apply to both. These fruits will do well in any good, rich soil, but succeed best where it is inclined to be moist. In a dry, sandy soil the more tender sorts will ripen the wood better, but in such a soil thorough mulching is necessary for the raspberry. The ground should be tilled deeply and finely before setting the canes, and manured every year with old manure, or what is better, a compost of muck

and stable manure. This should be applied in the spring. For plants, select those that have plenty of small, fibrous roots; one year old plants are best for transplanting in all cases. The canes of all varieties of raspberries and blackberries are biennial, that is, canes are produced one year, fruit the next, and then die; but the roots may live an indefinite period, as they are perrennial. They may be planted from three to four feet apart, and with the stronger growing varieties of blackberries, six or eight feet between the rows. The canes should be cut down to within a foot of the ground, and weakly plants even down to the crown. Planting in rows and then restricting the plants to hills or stools by persistent pruning, is recommended as the best method.

The old wood should be cut away as soon as the fruit season is over, and the canes shortened—of the blackberry—to four or five feet, and the laterals to a foot or eighteen inches. With raspberries, shorten the canes about one-third their length. The usual way of training is simply to tie the canes together around a stake set in the ground. They are tied about a foot and a half from the ground, so as to give the top a chance to spread. Another method is to set two parallel rows of stakes, stretching wire or tarred rope along each row.

Of the varieties of raspberries suitable for our climate, the *Clarke* comes first on the list. The *Red Antwerp* and *Fastolf* are old and tried varieties. The *Philadelphia* and *Franconia* are well spoken of.

Of blackberries, the *Dorchester*, *Kittatinny* and *Sable Queen* are good varieties. The *Dorchester* is one of the oldest sorts, and for hardiness and bearing qualities has few equals. The *Sable Queen* is comparatively a new variety, and one we think worthy of cultivation. •

A few words in general upon this subject, in closing. Success in raising small fruits for market depends upon wide observation and a sound judgment. Each cultivator will have to learn a great deal for himself. No written essay or book rules can be taken for a sure guide for all conditions of soil, localities and climates. Experience is needed in all these things, and then thinking you are right, go ahead; and if you run against a snag, back up and get a better hitch and try again. In the matter of inducing to the practice of raising more fruit for family use, I don't believe there is any danger of overdoing the business. Fruits for the family will *always* pay.

But this paper is already too extended, and in closing I will add

this advice : invest sparingly at first, and let your investments increase with your business and experience. Endeavor to *create* a demand in your locality for these fruits, and for those of the *best quality* ; and let your high aim be to never lower the standard of the quality of your fruit in raising, nor your standing for integrity and virtue in selling.

DISCUSSION ON CHERRY CULTURE.

Mr. STARRETT of Warren, called attention to an allusion in Mr. Fernald's paper to potash as a remedy for the black-knot, and inquired, if potash is a *remedy* may not the exhaustion of it in the soil be a cause? He would like to know if any one had noted the effect of wood ashes, as a dressing for cherry or plum trees,—whether or not they had any effect in the prevention of the knots?

Mr. FERNALD. I have applied ashes to my trees, but I don't know as I can state definitely what has been the effect. I have observed no black-knot on my trees of improved varieties. My trees are very smooth, and it may be that the application of ashes has had the effect to prevent this disease.

PRESIDENT GILBERT. Have you had any difficulty with your improved varieties of cherry trees from the curculio?

Mr. FERNALD. Yes, there has been considerable. There has also been the same on my plum trees. They are very fruitful and great numbers of plums drop off, yet as many come to maturity as the trees ought to bear. I notice that almost all of those which drop off have been marked by the curculio, and on my pear trees, which are near by, I find the same marks, the little marks of crescent form, made by that insect. I have never tried to any extent any of the precautions recommended for destroying the curculio ; my time has been so much occupied while the insects were making their depredations, that I have had little opportunity to observe these precautions.

Mr. GEO. B. SAWYER. Allusion was made to the cracking of the bark of cherry trees in connection with the black-knot. I would inquire if there is any reason to suppose that one has any connection with the other? I have seen nothing to lead me to suppose so. When the bark cracks the gum oozes out, but I see nothing to connect that with the black-knot, or the black-knot with that. I would say that on my improved cherry trees I have not seen any signs of black-knot, but have them, as everybody has, on the Kentish. I have tried spirits of turpentine as a remedy

for the black-knot, and have every reason to think it will prove successful. I made the application several times last year, and where I tried it the knots dried up, and were easily removed, leaving the surface somewhat hardened but not injured. I have also cut away the knot and then applied carbolic acid in the shape of carbolic soap, putting it on as I would grafting wax, with good results. I propose to try both next season. My belief is that the turpentine will do it. I simply saturate the knot with the turpentine without cutting.

MR. GILBERT. If it is caused by an insect wouldn't the turpentine be likely to kill the insect?

MR. SAWYER. If caused by an insect, I think either the turpentine or the acid would kill the insect. If it is a fungus, I think the carbolic acid would kill that. I believe that it is a property of this acid, that it is the deadly enemy of fungus of any sort.

MR. SMITH. Is this black-knot an insect of parasitic growth? If it is a parasitic plant it attaches itself to certain kinds of trees. When the trees are smooth and glossy it don't stick as it does to a fuzzy growth. I know that on cutting apart the black-knot we generally find an insect there, but I have always thought that an insect laid its egg in the knot after the plant made it.

MR. FERNALD. You have noticed that the investigations of Mr. Reed, which I have incorporated in my paper, regard the fungus as a consequence, and not the cause—that the cause is insect depredations on the tissues of the plant or tree; while another person whom I have quoted says that the fungus is the result of spores, which attach themselves to the tree. Mr. Reed says, they may be produced on the tree or come on it from another source through the operations of the microscopic insects. I have seen no theory that in my opinion is so well substantiated.

MR. GILBERT. Do you succeed in making cherry trees bear well?

MR. FERNALD. I have taken no particular pains. I have had no method of pruning. I have merely given them a good chance to grow, taken pains in setting them out, and keeping the ground in proper condition. They bear very well. Several of my trees were purchased two years ago. Last season there were four or five of them that bore fruit. They were of the usual size of nursery trees. Several of them have grown remarkably well. One increased four inches in diameter in the two years.

QUESTION. Is it high land?

Mr. FERNALD. Yes, it is on the southern slope of a high hill, near the head of steamboat navigation on Long Lake. The soil is a hard granite soil, rather shelly, with a gravelly subsoil. The land has been cultivated for sixty or seventy years as a vegetable garden, never having been laid down during that time. If I put the plow down further than we have been accustomed, and turn up the gravel, the soil will come together almost as hard as clay.

Mr. VARNEY. If Mr. Fernald is in a location where he can raise cherries, I think he is very fortunate. There are very few localities in the eastern section of the State where cherries will grow, or where it is of any use to attempt their growth. Some sour kinds may do well. As to plums, I was obliged to take out all my old stock of the blue damsons. I took them out root and branch, and since that time I have had no trouble. I now use the Mazzard stock.

Mr. SAWYER. Do you think the black knot is contagious?

Mr. VARNEY. I do, and think it is generally so regarded.

Mr. SAWYER. There was a good deal of discussion on this subject at the meeting of the American Pomological Society at Chicago. It was discussed by Mr. Meehan, Mr. Hovey, Prof. Riley, and others. They didn't agree about it any better than we do.

Mr. VARNEY. I should hope every farmer would attempt to raise a variety of cherries. Mr. Pope can raise cherries at his place, [in Manchester], but at Vassalboro', on the other side of the Kennebec, we can't do it.

DISCUSSION ON SMALL FRUITS.

Mr. VARNEY. There are some things in the last paper, on small fruits, that I wish to speak about. In the list of raspberries that our friend has given us, there is only one variety that I should attempt to propagate; and the blackberries which he recommends we gave up years ago. The Sable Queen is too tender to grow in Maine. The first blackberry on the list is the Dorchester, next the Kittatinny, and then the Lawton, if you must have any more. The best of our raspberries is Brinkle's Orange, but it is a little tender. The next is Knevitt's Giant. The Clarke I consider entirely worthless, though I am not certain that I have the true variety by that name.

Mr. SAWYER. The Clarke does well with me. It is the best variety I have.

Mr. VARNEY. I have tried it several years. It would seem to grow well enough, and the stock would be hardy enough but I never could get a perfect berry. It is possible that there is some deficiency in my soil. Of black kinds the Mammoth Cluster and the Seneca do well. I have also the Golden Thornless. Its berry is the best of all, and in market it sells well, though it is not so juicy as some others.

Mr. FERNALD. I have cultivated raspberries and blackberries for some time, and some years I have had an abundance of them for the family. I have the Golden Thornless and the Brinkle's Orange. As Mr. Varney says, the latter is the best raspberry among us. I have the Sable Queen and the Wilson's Early blackberries, but I think we shall have to discard them, as they kill badly above the snow. The Lawton also suffers from extreme cold weather, and is not hardy enough for this State. The Kittatinny is very hardy, my canes stood five feet from the ground.

PRESIDENT GILBERT. Is the Kittatinny hardier than Wilson's Early?

Mr. FERNALD. It is with me. My Wilson's Early killed out, while the Kittatinny survived.

Mr. VARNEY. A word more about strawberries. Two years ago I raised an enormous crop of them. I sold from an eighth of an acre a little over 600 boxes. They netted me 35 cents per box for the whole crop, boxes returned. They were on a piece of flat, high ground. The following year they blossomed well, and I might have got six quarts from the whole piece. I have raised strawberries ten years, and once in three or four years I get an abundant crop. I have the Wilson's Albany and the Nicanor. The Green Prolific is not fruitful with me. I have another strawberry, the Col. Cheney, which I think is the best of all. Those are about all the varieties that I have. I think that with experience there will be found to be more profit in raising strawberries than any other small fruit.

Mr. GILBERT. On what does the crop depend?

Mr. VARNEY. On the season. Two years ago Gen. Tilton raised a great crop of strawberries. The next year they died, because, as he said, they were not mulched. The next year he didn't have much of a crop, they were killed by mulching them. My experience is, that on land not much exposed, it is as well not to mulch at all.

Mr. SAWYER. Is it advisable to cover the earth between the plants?

Mr. VARNEY. Not for a winter protection, but I would for summer. The year I raised the large crop I used leaves for mulching and covered them with sticks and boughs, just enough to keep the weeds down. I don't think anybody has seen a plant this winter since the snow came on.

Mr. SIMPSON. I have always succeeded in raising strawberries. My soil is clayey. I have raised them a great many years on the same bed. My mode of cultivating is to set them in hills in rows; let them grow one year and let the vines grow in between the rows. In the fall I turn the old plants under and leave the runners between the original rows to grow the next year. I think success depends much on soil and mode of cultivation. A neighbor, perhaps 50 rods from me, whose soil is light, cultivates them differently from what I do, and gets a larger crop. I think he raises from a piece of ground of about the same size as mine, twice and perhaps three times as many as I do. He dresses heavily with barn-yard manure. I generally cover mine, and in the fall put a heavy dressing of barn-yard manure between the rows on top of the soil, after I have turned the old vines under. For covering, I use fir boughs or leaves. I think a covering of fir boughs affords the best protection from the cold. I have never failed in getting a fair crop of strawberries, and I think the same would hold good of raspberries and currants. Raspberries need high cultivation and very strong manure, the stronger the better. I know several gentlemen who succeed well in raising them.

PRESIDENT GILBERT. I would inquire if it is necessary to cultivate the Black Caps highly?

Mr. SMITH. That has been my experience. We cultivate ours very highly, and get abundant crops. I find them to be as profitable as strawberries. They don't require much care after you get them growing. We don't cover them.

PRESIDENT GILBERT. The conflicting testimony which we have in regard to which varieties are most valuable, is quite probably due to difference of soil and locality, and proves that it is necessary, in order to give value to such testimony, to connect with it a statement of the character of the soil. There are few varieties of strawberries that will accommodate themselves to our soil, and there are some of them that will succeed only in a peculiar kind of

soil. In relation to winter protection, the strawberry growers in this vicinity, who supply the Lewiston market, or quite a number of them, are careful to plant where the snow will be likely to remain on through the winter, and trust for protection to that alone. I would inquire if any one has had any difficulty with the white worm sometimes known as the sward worm, which feeds on the grass roots, and works in the potato field occasionally? It turns into what is called the May-beetle or Dor-beetle. In some localities there have been complaints of its ravages upon strawberry plants.

Mr. SMITH. I have been troubled with them very much and have adopted the plan of letting the runners grow. I lost half my crop one year, and if I had let my runners grow should have had a good crop. I take off the first runners and leave the last ones. I put the rows three feet apart and cultivate before the runners begin to start. By cultivating the ground before I set the plants, I can kill a good many weeds, and then by cultivating it afterwards and cutting off the first runners, I can keep the weeds off so as to let the last runners take root and get as many or more strawberries from them as from the old plants. The only difficulty I have had from winter killing was a year ago last winter. I never saw plants look better than these did. The piece was well mulched with straw, covered deeper than I ever covered before. The snow went off of about two-thirds of the piece, the rest was covered with snow and there I raised my strawberries. It was a very open winter and very cold, and the alternate thawing and freezing of the plants that were uncovered killed them. I think well of putting on boughs, but I think the better way is to get a place where the snow is likely to be on.

Mr. McLAUGHLIN. Having raised nearly all the different kinds of strawberries in my own garden and seen them raised by others, and heard some of them highly recommended by those who have them to sell, I think that the only one to be fully recommended for a standard crop is Wilson's Albany. There are other varieties which may do well enough for the amateur. The general objection to the Wilson's Albany is its acidity. If you are raising them for your own use let them ripen and you will find them good. For the general market they are picked, like many other fruits, before they are matured.

As to mulching, I think that where the snow can be kept on the ground it affords the best covering, and that the best way is to

plant where the snow will lodge. I have known large beds well mulched to be killed in certain years,—only a plant here and there left, and other beds that were not mulched were not killed. It may be, that whichever road you take you will wish you had taken the other. But take two beds, side by side, the one covered and the other uncovered and it will be found that the uncovered one will stand the best chance. There is a covering which I have seen used which I would as soon risk as any, that is a simple board. A few light boughs, or if straw, a very little of it, may be better.

MR. SAWYER. Isn't there some injury done by freezing and thawing in the spring after the snow goes away?

MR. McLAUGHLIN. I think that is the only trouble, and that the plants are never injured by cold weather alone.

MR. SMITH. I think the direct rays of the sun coming to the plant and thawing them does about all the damage in winter-killing.

MR. McLAUGHLIN. I think hard freezing don't hurt them. After a plant is frozen it can make no difference whether the thermometer is ten or thirty degrees below the freezing point.

Of the varieties of raspberries, I think that Brinkle's Orange is for family use the nicest. The only objection to it is its tendency to run out—that is, it must be replanted oftener than some other kinds. I have not grown the Clarke. I like Knevitt's Giant, but think Brinkle's Orange is better. I think all raspberries and blackberries are better for bending down in winter—take a heavy pole and bend them down. They will sometimes be killed by the cold, but generally the crop will be heavier for bending down.

PRESIDENT GILBERT. I want to add a word of testimony in favor of the Clarke raspberry. I consider that it is a delicious berry, and when well grown it is very large, of very good flavor, and unlike the Philadelphia, very even in size. The Philadelphia, being hard and firm, is a good fruit for transportation, but this feature is objectionable for home use. I grew the Clarke last year three-fourths of an inch in diameter.

MR. FERNALD. I would inquire if any one has tested the Mammoth Cluster?

MR. SAWYER. I have, and consider it very desirable.

MR. VARNEY. I would say that of all the small fruits grown, I prefer the cap raspberries,—taking the Davison's Thornless Seneca Black Cap, Golden Thornless and Mammoth Cluster.

Adjourned.

SECOND DAY.—MORNING SESSION.

The discussion on Small Fruits not having been completed the previous evening, was resumed, with special reference to the revision of the Society's catalogues.

BLACKBERRIES.

Dorchester.—Mr. VARNEY. The best blackberry grown.

The PRESIDENT. What is the testimony in relation to its hardiness?

Mr. VARNEY. Hardest of all.

Kittatinny.—Mr. McLAUGHLIN. It does well with me. I get a good crop two years out of three by laying the tops down. The only objection to it is that it spreads so rapidly it becomes a terrible nuisance in a small garden.

Mr. VARNEY. It is the second best.

PRESIDENT GILBERT. Are any of the blackberries hardy enough to stand our climate without laying down?

Mr. McLAUGHLIN. I think the Kittatinny would live, but I think it will do better by laying it down.

Mr. SAWYER. I have tried many kinds and never lost many plants by winter killing.

The PRESIDENT. That is an illustration of the fact that the protection required in our northern section is not required on the seaboard.

Wilson's Early.—PRESIDENT GILBERT. Has the experience of any of you proved that the quality of the fruit is objectionable—that there is a hard core in it?

Mr. VARNEY. I don't think much of it.

PRESIDENT GILBERT. From the testimony brought out thus far, I think it is evident that the Society will not recommend a large culture of blackberries.

Mr. McLAUGHLIN. I have done well with the Kittatinny, but I tried the Lawton several years, and discarded it. I never saw an eatable Lawton raised in Maine. They are sour and hard, and don't have at all the flavor that they do in New Jersey.

Mr. SAWYER. I would like to know if any gentleman has cultivated *any* blackberry with profit?

Mr. SIMPSON. I have a friend who got the largest wild black-

berries he could find. They grew much larger by cultivation and were very nice.

MR. SMITH. I would recommend that we seek some varieties from our woods and fields and try them. I think we might succeed with Maine varieties. I have seen some beautiful blackberries growing in the woods,—the fruit very nice and the bushes hanging full, and I don't see why they wouldn't do as well in the garden. It is apt to be the case with the fruit that comes from other climates, that it won't grow or that it won't bear. The Kittatinny don't winter kill with me, but it don't bear.

FRIEND TAYLOR. Some eight or ten years ago I saw a blackberry bush hanging full of very large berries, nearly or quite ripe. I picked off what were ripe and stuck down a stake by the side of the bush in order to recognize it at some future time. In the spring I took it up and planted it in my garden, and from that we have raised more fruit than from all the foreign varieties we have tried. We have tried several varieties, but they have died in the winter. In a very secure place they will survive, but most of them have failed with me; but from this native blackberry I have picked a large quantity of excellent fruit of pretty good size. From that I am led to believe we may select some varieties in our State that will survive our severe winters and produce good fruit. I suggest that we improve our native blackberry, find the best fruit and cultivate it.

MR. GILBERT. The question occurs, whether the hardness of the native blackberry is not in the locality in which it is found and the protection it receives from nature, as it is usually found in localities where the snow is deep around the bushes and protects them in the winter.

CURRENTS.

MR. FERNALD. Has the variety called Ogden's Black been introduced to any extent? I have one flourishing bush and it has borne excellently.

MR. SAWYER. I have grown it a good many years and have found it better than any other black variety I have grown. It is better than the Black Naples, has all its good qualities, and is not so astringent.

MR. McLAUGHLIN. Are any of the black varieties worth raising except for wine? If not, it is of no use to raise them except in quantities.

Mr. SAWYER. They are desirable for jellies and for all culinary purposes.

Mr. SIMPSON. I move that we strike out the Black Naples and Ogden's Black. I don't believe it is well to encourage the cultivation of either kind of black currants. I don't believe they are profitable to anybody, and the list should be such as we can profitably select from.

Mr. SAWYER. I should hardly be willing to see the black currants stricken entirely from the list. Many people desire them. I am willing to strike out the Black Naples. I suppose every one knows the black currant, and if a person don't want them he won't plant them. I observe that they retain them on the list of the American Pomological Society.

Mr. VARNEY. I raise a currant called the Red Imperial that I think very much of. The fruit is between the size of the Cherry and the Red Dutch. Perhaps the berries don't average much larger than the common Red Dutch, but the stems frequently measure six inches in length. It is very prolific and a good grower. My impression is that if I could raise but two kinds of currants they would be the Red Imperial and the White Grape. The Red Imperial is very hardy and one of the best kinds we have.

The PRESIDENT. Does any one wish to add it to the list?

Mr. VARNEY. I should be pleased to see it on the list.

On motion of Mr. McLAUGHLIN, the Secretary was directed to add the Red Imperial to the list of varieties recommended, with the description.

Mr. McLAUGHLIN read a paragraph from Downing in which the Imperial Red is mentioned as a synonym of La Versaillaise.

PRESIDENT GILBERT. It might be well to insert it as a synonym.

Mr. VARNEY. I should as soon think of inserting the Black Naples as a synonym for the Versaillaise. The size, quality, growth, shape and looks generally do not bear any resemblance to the Versaillaise. The Red Imperial has not so large a berry, has longer stems, bears more plentifully, and has fewer seeds, than the Versaillaise.

Mr. McLAUGHLIN. Where does the Cherry rank?

Mr. VARNEY. It has shorter stems, and perhaps a little larger fruit than the Versaillaise. But this Red Imperial is an entirely different currant as grown by myself, and as I have seen it grown by others, and as it is advertised by nurserymen.

Mr. McLAUGHLIN. The Red Imperial is not down in the American catalogue.

PRESIDENT GILBERT. It is a matter worthy of consideration. We don't want to confound varieties.

Dr. GARCELON of Lewiston. Three or four years ago I ordered several varieties of currants from Mr. Goodale. Among them were the Versaillaise, the White Dutch and what I supposed to be the Cherry. I would say that there is a marked difference between the Versaillaise and any other currant I have. I regard it as the best currant that I have ever raised or seen. It is the most prolific and the best for eating.

On motion of Mr. SAWYER, the matter was referred to the fruit committee, with instruction to make the catalogue conform to the facts as they find them.

GOOSEBERRIES.

Smith's Improved was discussed without eliciting anything of importance in regard to it.

Mr. ABBOTT. I would inquire about the Houghton's Seedling, the American Seedling and the Mountain Seedling. The two former I have raised. I have quite a number of the Houghtons, and they have fruited well. The American is a somewhat upright grower; I have succeeded well with it. The Mountain Seedling I have not tried.

The SECRETARY read from the catalogue of the American Pomological Society: "Mountain"—large, oval, reddish, good; use,—market; season,—medium; origin,—American; a strong growing bush,—berry with a very thick skin.

Mr. ABBOTT. I think not liable to mildew. It was so recommended to me.

Mr. McLAUGHLIN. I think the Downing will supersede the Houghton. I think it is a better bearer. I think 50 bushels of gooseberries would supply the market of Maine.

PRESIDENT GILBERT. The Chair takes exception. They are brought here from New Jersey in large quantities.

Mr. SAWYER. I can sell gooseberries easier than any other small fruit.

Mr. McLAUGHLIN. I have raised them, and had more of them lying under the bushes, than I have sold and picked for the last ten years.

RASPBERRIES.

On motion of Mr. SIMPSON, it was voted to divide the list of Raspberries, so that the cap varieties shall be distinguished from the others.

The PRESIDENT. Last evening considerable was said of the *Brinkle's Orange*. We have it in our catalogue as the *Orange*.

Mr. McLAUGHLIN. Orange is the true name, but it is extensively known as Brinkle's Orange.

Mr. VARNEY. My impression is that it is known the world over as Brinkle's Orange.

The PRESIDENT. It is best to call things by their right names. We have decided that Orange is the correct name, and it is so called in the American Catalogue and Downing. In the nursery-men's catalogues it is given as Brinkle's Orange.

Voted to insert Brinkle's Orange in the catalogue as a synonym of Orange.

Mr. VARNEY. Is the *French* a cap or sucker variety?

Mr. McLAUGHLIN. I know nothing of it. It was put in the catalogue last year at the suggestion of some other parties who thought highly of it.

The PRESIDENT. I think we had better strike it from the list unless we do know something about it.

Mr. McLAUGHLIN. I should not have put in on my own account. It is not in the American Catalogue but is in Downing.

On motion of Mr. SAWYER, it was voted to strike the French from the catalogue.

The PRESIDENT. It will be observed that the *Clarke*, which was discussed somewhat last evening, has no foot-notes. Would it not be well to give some foot-notes relating to success in cultivation, opinion of quality, desirableness of fruit, &c.

Mr. SAWYER. I think it would be well to extend all the foot-notes somewhat.

The PRESIDENT. Might it not be well to recommit this list to the fruit committee for revision in accordance with the recommendations we have given here?

Mr. SAWYER. I suppose that should apply to all our fruit lists, after we get through.

On motion of Friend TAYLOR, it was voted to recommit the fruit lists to the committee to be revised in accordance with recommendations made at this time.

STRAWBERRIES.

Mr. VARNEY. I move we strike out the first three varieties named in the catalogue.

Mr. McLAUGHLIN. Is there anything to take their places?

Mr. SAWYER. We have a great variety of soil and climate in this State. In respect to any fruit, I suppose no one expects that we can make a list that will be a safe and final guide in all places. We make the best list we can as a guide to beginners. We must recommend *some* list. Now with so many varieties as we have in the country and State, I think we ought to extend our list. We know that there is a large list of varieties that are grown in places in our State with success. I notice that the *Charles Downing* has been grown successfully by some. Mr. Varney spoke of the *Nicanor*, which I have grown, and am satisfied that it is hardy and moderately productive. Mr. Varney also spoke of the *Colonel Cheney*. That was highly recommended at the meeting of the American Pomological Society at Chicago, and is recommended by many of the papers. I think we should recommend these for trial.

On motion of Mr. McLAUGHLIN, it was voted to insert the *Colonel Cheney*, and of Mr. VARNEY, the *Nicanor*, with descriptions.

Mr. VARNEY. The *Triomphe de Gand* with me, in some seasons, has been a most desirable strawberry. It has proved uncertain, but at times it has been the best of any. I have raised good crops one year and the next year they would fail. Two years ago I commenced picking the *Nicanor* on the 23d of June, six days in advance of other varieties, and closed on the 26th of July, three days later than anything else. It should always be grown on the hill system. It appears to be a shy bearer, but if you cultivate on that system and keep account, you will find you get as good a crop from that variety as any other.

The PRESIDENT. Would you recommend that hill culture be extended to all varieties, or do you recommend it for that particular variety?

Mr. VARNEY. For that particular variety, the *Nicanor*.

Mr. SAWYER. I would inquire in regard to the *Jucunda* and the *Charles Downing*, what success has attended their cultivation?

Mr. SMITH. I have cultivated the *Charles Downing*, but did not consider it profitable. I found it a shy bearer.

Mr. FERNALD. I have not raised the *Jucunda* to any considera-

ble extent; but have raised a few for my own use. It has a high reputation; and I notice in the *Fruit Recorder* that it is recommended highly for amateurs and for professional cultivators if they give it good cultivation. It requires high cultivation, I believe, to get the best crops. Some of my acquaintances have raised it and like it much indeed.

Mr. McLAUGHLIN. I have seen the Jucunda undertaken for market and given up as worthless.

Mr. A. S. SAWYER of Cape Elizabeth. So far as the cultivation of the Jucunda is concerned, I have had a good deal of experience, and finally abandoned it. It does well if you have time to wait for the second year, but the first year it is not worth growing as a crop for market. We have gone back to the Wilson's Albany. I am now speaking of it as a crop for profit. For my own table I should grow a few of the Jucunda, and perhaps a few of some other variety, say Hovey's Seedling.

Mr. T. C. HERSEY of Portland. Yours is a light soil. It would do better on a mellow soil.

Mr. A. S. SAWYER. Yes, mine is a light, sandy loam.

The PRESIDENT. I would like to know if all cultivators for profit do not fall back on the Wilson's Albany?

Mr. A. S. SAWYER. I think so.

Mr. McLAUGHLIN. I shouldn't try anything else.

Mr. HERSEY. Although it may be the most profitable for market and best adapted to bear transportation, I do not consider that it is a decent strawberry.

Mr. McLAUGHLIN. As it is usually put into market, picked green, it is about as poor as anything that can be eaten. But if you raise them for yourself, and let them remain on the vines until they ripen, they are good eating. Strawberry culture in Maine is on a limited scale as yet, and there is little or no difference in the price of the different varieties. In the New York market the purchasers know the difference between kinds, and there you find corresponding differences in the prices.

Mr. FERNALD. As near as I can learn by observation and experience, the main virtue of Wilson's Albany is its iron-clad qualities. It is adapted to all varieties of climate and soil, and will stand extremes of heat and cold; but the general impression is, that for quality it is inferior to other kinds.

Mr. SMITH. Mr. McLaughlin has given my idea of its quality. It is a fruit that is red when it is *green*. If it is carried into mar-

ket as soon as it is red, people will buy it, and sugar makes it sweet; but if it is left on the vines until it is ripe, it is as good a strawberry as I want. I carry my strawberries into the Gardiner market in a peck measure, and tip them out as I would potatoes. They choose to take them in that way, but at Lewiston they want them deaconed up, topped over. They will buy them in Gardiner in bulk by weight or measure, and when I tip them out they will roll out all in a body, but when they are green they won't jam. I have tried another variety, the Borden's No. 30. I brought some of them to Lewiston, where they were pronounced not as good as the Wilson. They were not tart enough.

Mr. McLAUGHLIN. Isn't it a shy bearer?

Mr. SMITH. It don't bear as well as the Wilson, but they are extremely large and are abundant when they do bear.

Mr. G. B. SAWYER. Isn't it the same as the Green Prolific?

Mr. McLAUGHLIN. If it is I would soon throw it away.

Mr. A. S. SAWYER. I tried Borden's No. 30 three years, and turned it under. As to its general points, it is a very fine fruit—when you get it. I don't think it is the same as the Green Prolific. In the strawberry business the great want is a market. We depend wholly upon the Boston market. Our fruits come on later than their's, and they give us the market after their crops are exhausted. Last year we started about the 4th of July (from the 1st to the 4th), at 22 or 23 cents per box and run down to about 16 cents, and then the price advanced so that we cleaned out at 25 cents. We send them unhulled, and can ship them there in good shape.

Mr. VARNEY. The Green Prolific foliage grows much like Wilson's Albany. They are about the same shape, about as soft, and not so large.

Mr. ABBOTT. Would anybody set out strawberries at any other time than in the spring, and expect them to succeed?

Mr. McLAUGHLIN. I would set in September every time. You get a good crop the next year, which you can't do if you wait and set in the spring. I would take the fall by all means, if in a good situation.

Mr. HERSEY. Is n't August preferable to September?

Mr. McLAUGHLIN. I think it is if the weather isn't too dry.

Mr. HERSEY. I find I have most success in August.

Mr. McLAUGHLIN. I should expect to if I could make them live. I find no difficulty in doing that by putting them in in September.

Mr. FIELD of Lewiston. Which is the best soil for strawberries, sandy or clayey? and how many plants do you set to the acre?

Mr. A. S. SAWYER. I should want a moist, sandy loam, land that would naturally grow two tons of hay to the acre. We put the rows $3\frac{1}{2}$ feet apart, so that we can cultivate between them, and set the plants 15 inches apart in the rows. I do not hill them. I set out my plants in the spring. The next spring the vines cover the ground, and I take up such plants as I want for setting. After picking the fruit I plow the vines under. I never pick a bed but one year.

Mr. SMITH. I think that is the best way. If I can pick twenty-seven bushels off of an eighth of an acre, I can afford to plow the vines under.

Mr. A. S. SAWYER. As soon as I turn the vines under I put in a crop of spinach. In that way we don't lose a crop.

Mr. VARNEY. Do your strawberries occupy the ground the first year?

ANSWER. Yes.

Mr. VARNEY. And you keep them in the ground one winter?

Mr. A. S. SAWYER. Yes; we get our spring spinach off the land in May, and then set our strawberries.

Mr. FIELD. What is wet, sandy land? Is it swamp land or high land? My land is dry, sandy land. People tell me that I have a good location for strawberries, and I have an idea of going into it. My land, though somewhat dry, stands both wet and drought well.

Mr. A. S. SAWYER. This is what I would do. I would put up a wind-mill and pump water and irrigate the land. I put up one last year at an expense of about \$150.00, and it paid for itself in one week.

Mr. McLAUGHLIN. How much land do you cultivate?

Mr. SAWYER. Not more than one acre.

QUESTION. The water-works irrigate that?

Mr. SAWYER. Yes, I have a hydraulic ram, and this wind-mill was put up as an extra. I use the water mostly for my glass works, and when I have water to spare from that, and my strawberries need it, I run it on them. Take it in a good fair day, the wind-mill will pump 10,000 gallons in 24 hours. It works very finely. The water comes from a reservoir which I sunk by the side of a brook. The tower cost about \$25.00; the mill with a first-class force pump, \$125.00. The piping is extra. I have

1,000 feet of iron pipe which cost me \$80. I elevate the water into a tank twenty feet high, so as to give a head for the beds, as well as to run it on the plants.

MR. VARNEY. I want to say a word about the fall setting of strawberries. I have had the best success with fall setting. I would have my plants ready and set them when the ground was in suitable condition, if I had to wait until the first of October. I have had the best success in setting towards the latter part of September. If I couldn't run a strawberry bed but one year, I shouldn't want to undertake it. I should use my beds three years and sometimes more. By setting when the plants are well rooted, as late as the middle or last of September, I almost always get a crop the following year, and get rid of the severe drought of August.

DISCUSSION ON PEAR CULTURE.

PRESIDENT GILBERT. It has been stated that pear culture in Maine is assuming more importance every year. The most important matter for us to determine is, what varieties can be successfully grown in this State, and it is hoped that the discussion will draw out further information in regard to this matter. The discussion, as announced in the programme, will be opened by Mr. McLaughlin of Bangor.

MR. McLAUGHLIN. Without attempting an apology, I would say that when I received a note from the Secretary requesting me to say something on this subject, I did not take the trouble to decline as I ought to have done. When I saw my name on the programme, I concluded that my place had been assigned on the principle of a court martial, where they put the junior member on trial first. I intended to read up with reference to the subject, but have neglected to do so.

My idea is that the cultivation of the pear in Maine should rank only second to that of the apple, and yet I should hesitate to advise an indiscriminate rushing into pear culture in all our localities, with the expectation of getting reliable crops without getting pear trees killed every two or three years. If a man puts a few dollars into pear trees and occasionally loses one, he is apt to feel very badly about it, but if a merchant loses a few dollars, he takes it as a matter in the regular course of trade.

The selection of the location is a very pretty thing in theory, but a man can hardly change his soil, and many of us haven't

enough variety in soil to make any great selection. I should say that if you have about the description of soil recommended for strawberries—a very well drained, moist, sandy loam, it is a good thing. The drainage I think is important.

Of varieties it is difficult to speak. I think the list in the fruit books is too large for Maine, and it is difficult to select from. The list in our catalogue I think would hardly cover what many would like to have.

Mr. T. C. HERSEY of Portland, being called upon, responded. I am a mere amateur pear grower, and though under some circumstances I might have something to say upon the subject under consideration, I should hesitate to say it here, where almost every gentleman present is better able to discuss it than I am. My conviction is that we are attempting to raise too many varieties of pears, and I think one of the most ridiculous things ever done by our societies is to offer premiums for the greatest variety of pears. It cumbers the ground and is a waste in every way. There are not a quarter of the pears that are brought forward for exhibition that are worth handling at all. If there is any particular point which I would impress on the mind of a person engaging in pear culture, it would be this: Select a few of the best varieties, ripening at the different seasons of the year. Now the Bartlett is a very good pear, and no man cultivating pears would be without it. I have half a dozen trees of that variety, and if I were going to plant again I wouldn't have but one; for though it is one of our best pears, there is but one day that it is in good eating condition. If you cut it one day before it is ripe it is not good, and one day later it is gone, so that it cannot be recommended for extensive cultivation. I think there is no question that the Beurre de Anjou is the very best autumn pear.

Mr. GILBERT. What is the season of the Beurre de Anjou at Portland?

Mr. HERSEY. About November. The Flemish Beauty, I am satisfied from my experience, is a very good, handsome pear when the trees are young. I think its cracking and the rusty appearance of the fruit arises from the age of the tree. After the cracking commences, I have never been able to do anything to bring the fruit back to the original state. As to the adaptation of our climate to pears, a man going into their cultivation should expect the same conditions that attend everything else. There is no business that I know of which a man can undertake, without

chances for a loss. A merchant always takes these into consideration in his margin of profits, and I don't know of any reason why pear cultivation should be an exception to this rule more than any other kind of business. It seems to me it may afford very profitable and quite sure crops. It is in the power of almost every one to give the trees some protection. Evergreen trees protect them from the wind, and prevent the fruit from being blown off, and also afford protection in winter.

MR. SIMPSON. I have a Flemish Beauty in my garden which has been growing there several years and has never borne a perfect pear. Every one has cracked. I have a Louise Bonne de Jersey which is a good bearer, and has borne every year for seven or eight years. It is a good pear to cultivate, a hardy tree and does not winter kill. The character of my soil is clayey.

RUFUS PRINCE of Turner. I have taken a great interest in the culture of the pear. I believe it may be made a success in Maine. In regard to the cracking of the Flemish Beauty, I have a very nice tree of that variety and very seldom see a pear cracked. I don't know what the reason is, except that it gets the water from the sink spout—I have thought that might be it. I have never failed in getting nice trees.

The gentleman from Portland spoke of protection for pear trees. I have probably as bleak a place as there is—I was going to say in the State of Maine. My land has a north-western slope, and the soil is a gravelly loam. I have perhaps twenty or thirty pear trees which have now begun to bear,—standing where they are exposed to the northwest wind—where it has a clean sweep from the White Mountains. One year I had a Clapp's Favorite grow about five feet there, and it never winter killed a particle. I believe we need have little fear of trees being killed by extreme cold weather. I had a fence about six feet high, and set a row of trees by the side of that, and all but one of them died. I have set them several times and they have died, and I have got to give up the trees or take the fence away. So far as I am concerned I would rather the protection would be out of the way than to have it. I have never had any difficulty in raising the hardy varieties of pears on that northwestern slope. Any that we can raise *anywhere*, I can raise there. I had rather undertake to get an orchard of pear trees in bearing, than an orchard of apple trees. I don't know how long pear trees will last, but when I was a boy I set out pear trees that are now doing well. I have not succeeded with the

Bartlett. They winter-kill with me. They succeeded for a few years, but in 1857 they winter-killed. The great difficulty about farmers growing pears is, that they don't feed the trees. I am satisfied that to raise pears we must feed the trees better than any other fruit trees. Go into our cities and you will find that they all succeed with pears. So do I; but when I see a pear orchard in a mowing field, I don't find it a success.

Mr. HERSEY. In relation to cracking, I believe it is generally conceded that wood-ashes and salt put on as a dressing, are very good as a remedy for it. I have had good results from it. The protection of my trees is rather a natural one. In the twenty years I have cultivated pears I have rarely lost a tree, and *have never lost a Bartlett*.

Mr. PRINCE. I have no doubt that protection is very valuable to keep the fruit from blowing off.

PRESIDENT GILBERT. I understand that Mr. Goodale, having had large experience in testing various kinds of pears, and large opportunities for observation, and having had much to say about protection, was travelling through Turner and visited Mr. Ricker's orchard. Many of you are familiar with this orchard, and know that he is very successful in growing pears. The trees are perfectly hardy, as much so as apple trees, or even the rock-maples by the side of the road. The pear orchard is on a high hill, with a northwest inclination, and takes the wind, with no obstruction, direct from the White Mountains. The question was asked of Mr. Goodale—"What do you think now about protection for the pear?" "Well," said he, "they will grow without it, won't they?" So we find that while protection may be of some advantage, and of course it is in regard to the wind, it is not necessary to keep trees from winter killing.

Mr. HERSEY. I think I never lost a tree from the cold of winter; the chief advantage of protection is to guard against the wind. I would like to say that I have found the Rostiezer, for an early pear, an excellent one. It is a scraggly grower, but I think fully equal to the Seckel, and safer than that is. I think it should be highly recommended. I have also found the Belle Lucrative a very nice pear.

Mr. McLAUGHLIN. The great objection to the Belle Lucrative is its color—it won't sell—and the exceeding trouble of getting them. As was said of the Bartlett, there is only one day that it is fit for eating.

Mr. HERSEY. I have not had that difficulty, taking them at the right time.

Mr. McLAUGHLIN. That is the trouble with all pears—to take them at the right time.

Mr. HERSEY. The only way I can get Bartlett pears is take them off from day to day.

Mr. G. B. SAWYER, being asked in respect to pear culture in Lincoln county, responded: Pears are grown with considerable success in nearly every town in the county, both on the immediate seaboard and in the interior. Very fine specimens are shown every year at our county fair. The varieties grown embrace all those known in general cultivation; but having prepared no notes, I will not attempt to speak of them particularly. I regard the production of pears in our section of the State as being as easy and certain as that of apples. Although I have handled and still have in cultivation a good many pear trees, I have not given them the attention which they require, and am not so especially enthusiastic or expert in the business as to justify me in speaking on the subject at this time. Mr. Ingalls, who lives near me, and has a lighter and better soil than mine, has uniformly good success with them—cultivates many varieties, and has good and abundant fruit. His trees stand on a southeastern exposure, and are fully sheltered. He was expected to be here to-day, and was fully prepared to speak on the subject, but was unavoidably detained at home.

Mr. VARNEY. I, like my friend Sawyer, am not particularly enthusiastic in regard to pear culture, though I have to grow them. I passed yesterday in sight of the best Bartlett tree I know of in central or eastern Maine, standing on the east side of Belgrade pond. The orchard in which it stands is in sight of the road as you go up through Belgrade to Readfield. It has the full sweep of the northwest winds. I think that is the right situation to take. About three years ago we lost all our Bartletts. The following spring I went over to see this tree and found it all right, and that year it bore an excellent crop. The time to which I have referred was when we had an exceedingly warm day, about the 20th of February, followed by a very cold night. That was death to our pear and apple trees where they had any protection from the northwest winds. I lost some 500 trees. But up on the hills on each side of me, where they had good currents of air, the trees were unharmed. If I were to give protection to pear or apple trees,

it would be from the hot suns at this season of the year. If you could protect the stems on the south side by boards or evergreens, or anything of that kind, as already suggested, I should recommend it.

My experience with the Flemish Beauty has been that in strong soils there is but little trouble from its cracking; but I suppose on light soils there is trouble with it

QUES. Have you had any experience with the Goodale pear?

MR. VARNEY. Yes. I find them very strong growers. Some of the trees have borne fruit and promise very well indeed.

MR. PRINCE. I have twenty or thirty trees of that variety that have grown two or three years. I consider them promising.

DR. GARCELON. I have had a little experience in pear growing for the last six or eight years. I have one or two observations to make in regard to the subject, and particularly upon the remarks made by the gentleman from Portland concerning the Flemish Beauty. I have a fine, vigorous tree, young and thrifty. Its growth has been so rapid that I had to cut it back annually for three or four years. It was from the nursery of Mr. Goodale, and I felt that I could rely upon it. The first year that the tree bore the pears cracked so that they were entirely worthless. I could not tell the cause, but supposed it might be the too rapid growth of the wood. My garden has a clay subsoil, with a good, rich soil above it, which had been dressed with ashes, iron and salt, and stable manure in liberal quantities, and some bone-dust. The next season, after trimming quite liberally, the result was the same, and it has been substantially the same every year. There has been an improvement the last two years, and last year was the best. I had it trimmed until I was afraid I should trim it to death. It was so rapid a grower that the fruit was a failure. I make this as a reply to the remark that the age of the tree had much to do with the cracking of the fruit.

It seems to me that the soil of Androscoggin county is particularly adapted to the growing of such pears as can be raised in this climate. My attention was especially called to this matter by a gentleman formerly of York county, but who has removed to Virginia, and is engaged in pear and other fruit raising on James river. We know that the Southern growers can command the market in the earlier part of the season, but are there not varieties which we can raise here profitably to supply the market later in the season, as we do the strawberry?

In reference to the matter of protection, my impression is that Mr. Prince will find the explanation of the loss of his trees by the side of the fence to be, that they were so near that the radiation from the fence caused the trees to put forth more rapidly than was natural, and that they were lost in consequence of it. In riding over this section of the country, I have observed that the best orchards are those situated on high hills, where it would be supposed that it was so bleak that hardly anything would grow.

Pear culture is a new business with us, but it seems to me from what experience I have had, that we can make it a profitable business, and that there are varieties which are not only hardy and good bearers, but which will command a high price in the market. I have in my garden eight or ten varieties (I have been unfortunate enough to lose their names), which, I judge, might be raised anywhere, and would be a valuable addition to the agricultural interest.

PRESIDENT GILBERT. In conducting these discussions it seems well to fix upon some definite points. We have gone over the ground, and three points have come up which, it seems to me, it would be well to give the opinion of the Society upon, viz :

1st. Can pear culture in Maine be recommended by the Society? Let us settle that point, and if answered affirmatively, then let us consider—

2d. What are the requirements of locality and soil? And

3d. The incidental and less important points in regard to the Flemish Beauty.

Now as to the first point—Can pear culture in Maine be recommended by the Society?

FRIEND TAYLOR. I would say that according to my knowledge and practice in the cultivation of the pear it may be as successful as apple culture. I have had fully as good success in the growing of pear trees as of apple trees. I have lost, of course, some of each, but with me the raising of pears is a sort of haphazard matter. I do not engage in it on systematic or scientific principles. For the last fifteen years I have planted pear trees, and had as good success in raising pears as apples. I would recommend the culture of pears for this vicinity—perhaps not as largely as apples are cultivated, but in sufficient quantities for the supply of the market. To be sure in more genial climates they raise pears for the city markets better than we can, but two years ago I was in Ohio, and I noticed that most of the pear trees which I saw there

had the blight and were decayed. I have seen blight in this county once in a while. Lime seems to do good. I cut the wood off as soon as it begins to decay, and save my trees.

I have had some little experience in regard to location and protection. I believe that direct protection by a wall, building or anything else, from the northwest winds, is a great injury to the pear tree. I have noticed that trees do better in elevated positions than on lower land. I don't say that where the trees are exposed to the north and west winds the fruit won't blow off, for I know it will; but the tree itself will succeed better when these winds have free course through the limbs than in a sheltered position.

Mr. SMITH. I agree generally with the remarks that have been made. I think protection in this country, other than against the winds blowing off the fruit, is an evil. I know it by experience and observation. I don't know but that in too quick freezing there may be danger, but I think that generally it is taking the frost out so quickly by the rays of the sun that kills. This winter is a better one than that of a year ago. The frost has been gradually taken out by the rain, and I think not much damage has been done; but I notice that when the frost comes out quick in March, or at any time, that is the time for winter-killing. Bring a bundle of frozen scions to the fire, and let the heat come directly to them, and it will kill every one, but take it into a room where the temperature is a little higher than freezing, and take frost out gradually, and it won't hurt them. I think winter-killing is done by the sun, and that pear blight is a partial winter-killing. You will see that the ends of the limbs look as if they were partially winter-killed. As to the State of Maine, we can raise pears here, if we get those that are suitable to the soil, as well as they can in Massachusetts. I saw in Massachusetts last fall the same trouble that we have. Some trees were starved as you will see them here; some were bearing well as you will see them here, and some—the Flemish Beauties—were cracked as you see them here. They raise a great many pears there, and send large quantities of them here. We might as well raise them ourselves. My experience in Monmouth is, that I can raise pears as easily as apples. I planted some pear trees eleven years ago, which produced a good crop of fruit last year; while the apple trees put out at the same time have grown well but have fruited but little. [Mr. Smith exhibited fine specimens of Glout Morceau and Vicar of

Winkfield in illustration of his success—the latter grown on a thorn stock.]

When I went upon the place I now occupy, neither the apple or the pear trees were in a flourishing condition; but I have mulched them and have raised up the earth, I think two feet about every tree, and they now bear annually. I have served hundreds of trees in that way. I wouldn't fear banking them up to the limbs; there is no trouble at all about it. Whether the root is a thorn or a true pear, if the root does not supply the top with food, by bearing every year the tree exhausts its forces, and then we get no fruit.

MR. SIMPSON. Does n't your heavy mulching prevent the growth of the roots?

MR. SMITH. No, sir. I think they grow better for it.

MR. G. B. SAWYER. Don't you think pears require deeper setting than other fruit trees?

MR. SMITH. No, I don't. I think the great want is drainage; the land is not underdrained. There is more suffering everywhere from wet feet than from anything else. People dig holes and put their trees in them, and the water comes in and stands there more than it does anywhere else, and they wonder why the trees die. The reason is wet feet, in my opinion.

MR. SAWYER. To the general question propounded, whether pear culture in Maine is to be recommended, I think this society ought to give an affirmative answer, with the qualification that pears must be grown subject to the special conditions which they require, which, I believe, are somewhat different from, and more exacting than those which exist with reference to apples and some other fruits. I believe the pear is much more sensitive to climatic conditions and sudden changes in the condition of the soil. Hence arises the necessity of protection. I believe we need to protect, not from the cold or the winds alone, but from the operation of the sun—from sudden thawing and freezing, and to protect not only the trunk of the tree, but the roots. I believe that the universal experience is that where pear trees have suffered, it is on the side exposed to the sun. This is perhaps best prevented by allowing the trees to form low heads, so as to shade the trunks; or it may be done by artificial means, such as tying up the trunks with straw or placing boards against them. I believe that this cracking and blight are produced by the same causes; that the cracking of the pear results from sudden changes in the condition of the soil, pro-

ducing a more rapid growth at one time than at another; and that abundant mulching will produce comparative exemption from cracking by keeping the soil in a uniform condition. It is for the same reason, as I understand it, that Mr. Meehan recommends keeping the land in grass, not to be removed for hay, but to be left on the ground to keep it moist and of a uniform temperature. Dr. Hull of Michigan, a successful pear grower, recently deceased, recommends root pruning, claiming that it produces a vigorous growth of new roots, and that by this means he can prevent cracking. This was my reason for inquiring whether pear trees do not require deeper setting than apple trees. I did not mean to have the roots put in water. I wouldn't have them in any way subjected to the action of standing water, but I do believe (with the land properly drained) they require a deeper setting than apple trees. I believe that in suitable soil, land properly drained, and trees protected from sudden freezing and thawing, and with protection for the roots, we may raise pears as successfully, easily and profitably as any other fruit crop.

MR. SMITH. I think Nature teaches us not to set our trees deep in the ground, but I have seen where the ground was put round them to the depth of two or three feet, and it never hurt them at all; they grew the better for it. Dwarf pear trees, that is, pears grafted on quince stocks, may be partially changed to standards by banking up around them in this manner, causing the tree to throw out roots from the pear wood above the point of union. I have three trees of Flemish Beauty, one a dwarf and the other two standards, which bear every year. Four years I have fruited them and they never cracked but once—that was two years ago. Last year there wasn't a pear that cracked. I have used ashes freely, and phosphate. I have used a great deal of nitrogenous manure. I think that ashes, alkalies and vegetable matter, are better for the growth of the tree and the leaves, and phosphates better for the growth of fruit, than the richest barnyard manure. I think pear culture is profitable.

FRIEND TAYLOR. Is the effect of the application of manure upon the ground where it has been thrown up around the trees exerted upon the old roots, or upon the roots thrown out from the trunk?

MR. SMITH. I don't know what becomes of those lower roots, but the trees send out new roots round the whole trunk and takes a start and grows more rapidly than it otherwise would. All I can say is, if you don't believe it, try it.

Mr. McLAUGHLIN. Approving nearly all that has been said, I think the society may safely endorse a far more extended culture of the pear for family and market use in Maine. I should not at present want to go so far as to say that it may be as certainly depended on here as in Massachusetts. I think there are not many men who, travelling over the two States, would think it as sure a crop here as there. I have raised pears which were regarded as fully equal to those which can be grown in Massachusetts, and other persons in this State have done the same. But taking one year with another, I do not believe we can expect to raise them as easily and surely as they do in Massachusetts. But we can surely extend our pear culture till we grow a great many more than we do now, and make them, if not equal to those grown in Massachusetts, nearly so.

The matter of the proper distance for planting pear trees has not been touched upon. I think growers in other States, and some here, are beginning to set much more closely for protection and for the saving of room. It is believed that they will do better closely, than more scattering. Those holding this view put dwarfs about twelve feet apart each way, with a tree in the center of each square, and standards sixteen feet in the same way. Before the trees become large enough to interfere with one another, something will happen to some of them.

The question of blight has been discussed. I have been troubled with no other blight than the fire blight. By that I have lost several trees. It is said that a treatment of carbolic soap is a preventative, but I think there is no cure after the blight touches.

I would like to hear the views of Mr. Hersey on the question put by the President.

Mr. HERSEY. I think there is a good deal in what the gentleman from Bangor (McLaughlin) has said in relation to this subject. The influence of this society is to be felt throughout the State, and the results we arrive at and the recommendations we make are to have an influence; and we ought to be very careful that we do not lead people astray. That, generally, pear culture may be recommended I think is clear, but it may be well to add to that some qualifications, otherwise some might be misled. Under the conditions that pears require, this list of varieties recommended by our Society may be cultivated successfully in our State. I have raised them myself, with one exception, more or less successfully, and others have done the same. In relation to distance—a gentle-

man at my left says he has doubts about the dwarf pear. There *are* doubts about it. I have found that mine have not failed as rapidly as I desired. I plant my standards at what will be the proper distance for them when they are fully grown, and in each of the spaces between the standards, a dwarf, with the expectation that the dwarf will die by the time the standard comes into bearing. I think that is a good way. I plant the standard trees not as great a distance apart as the books recommend, which I think is thirty feet. The dwarf trees will live as long as they are wanted, and when the standard trees come into bearing they will protect each other. When the standard trees are left at too great a distance, the fruit is liable to be blown off by high winds.

PRESIDENT GILBERT. We have proved quite conclusively from the testimony presented, that a high locality may be recommended for pear culture, and this of course covers the ground that a clay soil is not absolutely essential to success, because in these high locations in this county where pear culture has been successful, the soil is of a granite nature—high, strong, granite soil.

Mr. FLINT. Yes, what we call a gravelly soil.

PRESIDENT GILBERT. With regard to the cracking of the Flemish Beauty, I think we have fixed a point. I think we have learned enough to deter any man from attempting to grow it. It has been extensively grown in the past and was perfectly hardy and reliable, but it is not so now, and it may be rejected and some other variety adopted in its stead. Some sections still grow good Flemish Beauties, but this defect has gradually grown upon it and becomes more and more apparent as time goes on. I think these points have been established and may be admitted as guides for the future.

On motion of Mr. Sawyer, Messrs. Hersey and McLaughlin were appointed a committee to consider and report to what extent it is expedient for this Society to recommend the cultivation of the pear in this State.

WEDNESDAY AFTERNOON.

The specimens of fruit presented for exhibition at this meeting were placed upon the tables at the opening of the afternoon session, and Messrs. Taylor and Smith were appointed a committee to examine and report on the same. Their report will be found on a subsequent page.

REVISION OF THE CATALOGUE OF PEARS.

PRESIDENT GILBERT. It may not be generally understood that the Society's list is a standing one, to be reprinted with such additions as the Society see fit to make from time to time, in the annual reports. We will proceed to consider the list of pears.

Doyenne d' Ele. From what has been incidentally said during this meeting, it is a query with me whether this pear had better remain on the list.

MR. HERSEY. It is a very early pear. It is never to be relied upon here as good, but perhaps as it is early it would be well to keep it. I know no other as early.

MR. GILBERT. Is it prolific enough to be recommended?

MR. HERSEY. It is not remarkably good, but it has borne well with me. I should not want to recommend it very strongly. It is a very good *early* pear, but don't keep long.

MR. McLAUGHLIN. How does it compare with Manning's Elizabeth?

MR. HERSEY. Not as good.

MR. SMITH. It ripens about the first of September.

MR. VARNEY. The middle of August.

MR. HERSEY. The first of August.

Goodale.—MR. GILBERT. The remarks say, "Fruit having a short stem; is liable to blow off." Is that more so than other kinds?

MR. G. B. SAWYER. I understand that Mr. Goodale says so.

Fulton.—MR. GILBERT. I understand that this is not a good grower—does not make a good tree in the nursery, and should be grafted into trees of vigorous growth.

MR. HERSEY. I have had no trouble.

MR. GILBERT. I saw in the garden of Henry Ingalls, Esq., in Wiscasset, a Fulton standing among other trees, that was not a quarter as large as the trees of some other varieties, and was the smallest of the whole list.

MR. HERSEY. Mine has not borne sufficiently to speak with great assurance, and it is not a large tree, but it is a pear I should not want to dispense with.

Howell.—MR. GILBERT. I believe this is generally considered a valuable pear among pear growers.

Urbaniste.—MR. McLAUGHLIN. A very light bearer and slow coming into bearing.

Mr. HERSEY. A safe tree, hardy, and a pretty good bearer.

Beurre d' Anjou.—Mr. HERSEY. One of the best.

Mr. GILBERT. Does not anyone know anything against?

Lawrence. Rostiezer.—Mr. HERSEY. Both good.

Dearborn's Seedling.—Mr. GILBERT. A very good grower. I have seen some fine trees.

Bartlett.—Mr. GILBERT. "In this State should be grown in well sheltered positions." According to the testimony this forenoon we should reverse that and say—should be grown in *exposed* positions.

Mr. G. B. SAWYER. Sheltered.

Sheldon.—Mr. GILBERT. Is not the Sheldon a very good pear in quality?

SEVERAL GENTLEMEN. Yes.

Beurre Hardy.—Mr. McLAUGHLIN. It does well with me.

Parsonage.—Mr. GILBERT. One of those not frequently mentioned in pear talk.

Mr. G. B. SAWYER. Does anybody know anything about it?

Mr. GILBERT. Mr Goodale, who did the laborious part of the work of making the catalogue thinks very highly of it, and that it will come into general favor when well known.

Mr. McLAUGHLIN. It does not appear in the American Pomological Society's catalogues.

Mr. GILBERT. That may be worthy of notice, but should not be an absolute guide for us, as their list does not apply to the State of Maine.

Mr. HERSEY. I move that it be struck from the list. [Motion carried.]

Mr. G. B. SAWYER. We don't mean to say anything against it—simply that we do not know anything about it.

Beurre Clairgeau.—Mr. G. B. SAWYER. A very fine tree and has fruited well with me.

Mr. GILBERT. What is its season?

Mr. SAWYER. Early winter I should say; it is marked Late Autumn in the American Pomological catalogue.

Mr. GILBERT. Has anyone present grown it on highland soils. Mr. Sawyer grows it on clay. Has Mr. Ham grown it?

Mr. HAM. I have none of the trees but I am acquainted with the pear. I understand from those who have them that it is a fine hardy tree. The designation in the catalogue with regard to season cannot be applied to this State. It is "late autumn"

in Massachusetts, and "early winter" in this State. It is so with the Duchess—two or three weeks later here than in Massachusetts.

MR. GILBERT. Those who understand the keeping of fruit know that "late autumn" means that you can keep it to the early winter.

MR. HAM. I buy the pear and ship it—from Massachusetts, mostly. They are fit to eat, say from the Middle of October to the middle of November. It is a good keeping pear, something like the Lawrence; can be kept late in the winter by proper care.

Winter Nelis.—MR. GILBERT. Is it dwarfish in its growth?

MR. McLAUGHLIN. Rather a moderate growth with me. Quality fine.

Vicar of Winkfield.—MR. G. B. SAWYER. I think it is well described in our catalogue.

MR. GILBERT. Is it not necessary that they should be thinned to perfect their growth and quality? I have seen them grown when nearly all were worthless, while a few specimens well grown, will attain a very desirable quality.

MR. SMITH. It is the case with most all pears that you cannot get them all good.

MR. G. B. SAWYER. I move that the Eastern Belle be added to the list, and will call upon Mr. McLaughlin, the originator, for a description of it. I will remark that it has been presented to growers in Massachusetts and before the American Pomological Society, and has been highly recommended.

MR. McLAUGHLIN. The tree is a seedling of the McLaughlin pear, which my father planted, and which has been bearing fifteen years or more. It is a moderate grower and perfectly hardy. The fruit is of good size, peculiarly rich and spicy, color yellowish, occasionally tinged with red, good shape, with long stems, very evenly distributed over the tree, and never rots at the core. I have never had any trouble with their blowing off. The tree is an upright grower. It is generally admitted by those who have tried it, to be a good pear. Downing in his last edition of "Selected Fruits," says it is one of the best.

I would suggest while I am up, as I must leave in a few minutes, that we add to our list of pears the Beurre Giffard as an early pear, and Manning's Elizabeth and the Beurre Superfin. The objection to the Giffard is one that attaches to all the early

pears, it must be eaten early. It is the largest early pear I know of.

Mr. G. B. SAWYER. At Chicago, President Wilder spoke of the Mount Vernon as desirable.

Mr. HAM. The Beurre Bosq stands highest among market pears.

Mr. SMITH. I have fruited the Beurre d' Assomption. It is a very large pear, and a very thrifty grower. I presented it at our exhibition last year. I grafted it in the top of a tree and it made a fine stalk. It bore seven pears, all large and of good quality. They would sell readily for six or seven cents apiece. Mr. McLaughlin calls it tender. I don't know about that.

Mr. HERSEY. I don't know anything about the Josephine de Malines, but the specimens presented here have kept well.

Mr. SAWYER. Do you believe it is as good as the Lawrence?

Mr. SMITH. It is a sweet pear. It has a good flavor. It is rather a shy bearer.

Mr. HERSEY. I can recommend the Beurre Diel.

On motion of Mr. VARNEY, it was voted that the Glout Morceau, Beurre Giffard, Beurre Superfine, Beurre Bosq, Beurre Diel and Manning's Elizabeth, be added to the list.

On motion of Mr. SAWYER, it was voted that the Fruit Committee prepare a descriptive list to be published with the catalogue.

REVISION OF THE CATALOGUE OF APPLES.

American Summer Pearmain.—PRESIDENT GILBERT. This is an old variety, but it has never been grown to any great extent, and the question occurs here, before we begin to weed, whether we shall *weed thoroughly* or not.

Mr. SAWYER. I suppose we may regulate the matter by the descriptive notes.

Mr. POPE. It seems to me that the "remarks" might be more extended.

PRESIDENT GILBERT. We find them in the descriptive list, following the catalogue.

American Golden Pippin.—Mr. GILBERT. I would like to inquire if the Golden Pippin on exhibition is the apple under discussion?

Mr. SHAW of Minot. I suppose that to be the apple. I have known it from my boyhood. It is an apple that I like very much, with the exception of the skin. It is a nice apple for home use,

and I should judge a good bearer. I have frequently tried to sell them in this market (Lewiston), but never succeeded in selling them to a person the second time. It is rather a coarse apple and its flavor is not as good as that of some others.

Mr. G. B. SAWYER. I have a single tree of this variety, and I am satisfied that it is the same thing. I find it a very desirable apple for cooking purposes. It is a vigorous and productive tree, but with me not as hardy as some others. Yet the tree has not been injured by the climate.

Mr. SHAW. There is another peculiarity about this apple. In keeping it until January it is apt to be covered with black spots, which injure its appearance. For that reason, if for no other, I would not recommend it.

Mr. SAWYER. Is it more so than the Fameuse?

Mr. SHAW. I have never raised the Fameuse. It is more so than any that I have seen in the shops.

Mr. SAWYER. Mine are not especially subject to that; not so much so as the Greenings.

Mr. SHAW. It is possible the variety may not be the same, but it looks like it.

Mr. GILBERT. If the apple cannot be more highly recommended than that, had it better remain on the Society's list?

Beauty of Kent.—PRESIDENT GILBERT. I have had my attention called to that this winter, by having specimens forwarded to me. It is quite a showy apple, but of low quality.

Mr. VARNEY. Put that and the Alexander and Cayuga Red-streak in the same basket.

Mr. GILBERT. It is different from either of these, and simply passable in quality.

Mr. SAWYER. It is down in the American Society's catalogue simply as good, not *very good*.

Mr. GILBERT. I think good is *too good*; it is hardly up to good. Poor would be better.

Mr. SAWYER. What is the use of keeping an apple on the catalogue that you can't call good?

Mr. GILBERT. To keep people from buying it. The *Beauty of Kent* is an apple we hear of and see large pictures of, and if we can reach the people and say to them that it is not worthy to be planted, we are doing a good work.

Voted to change the word "good" to "poor."

Black Gilliflower.—Mr. GILBERT. Had we not better strike that

from the list? It is not propagated at the present time. It is a fruit that many like, but it has not a high flavor and is dry; lacks juice.

Mr. SMITH. It has a tender skin, and is mealy.

Mr. G. B. SAWYER. I think some like it much. I have in mind a person who regards it as a fine apple. I have no objection to striking it out; it is not being sold.

Mr. SHAW. I think three-fourths of the people call it poor.

Cole's Quince.—Mr. GILBERT. This is not much cultivated at the present time, but is a very good apple.

Congress.—Mr. GILBERT. Does any one know whether this is identical with the *President*?

Mr. BRIGGS of Turner. I think it is not identical. In shape it is similar. I call it a very good apple, but for quality I prefer the *President*.

Mr. SHAW. Is not the *President* more oblong?

Mr. GILBERT. Both are flatish.

Mr. BRIGGS. Very much alike.

Dean.—Mr. BRIGGS. I would enquire if any are raised about here?

Mr. GILBERT. It has been introduced to a limited extent. They are sent here from Franklin county, and sell very well. I have met with them in other sections; have seen them in Sagadahoc county, large and good; I have had them forwarded from Somerset county for identification. It is sometimes called the *Nine Ounce*.

Mr. FERNALD. Do you know anybody who propagates the apple to any extent?

Mr. GILBERT. I think you can obtain scions from Loren Adams, East Wilton, or from Mr. Pope, our Treasurer.

Duchess of Oldenburg.—Mr. GILBERT. This is really indispensable in the northern portion of the State.

Fall Pippin.—Mr. GILBERT. Not extensively grown in the State, but highly recommended by those who have grown it, as an early winter apple. Further south it is a fall apple, hence its name.

Fall Jenneting.—Mr. GILBERT. It is grown quite extensively in this section. It is fine grained and, when fully ripened, of pretty good quality.

Foundling.—Mr. SHAW. I have been disappointed in it; would not mark it higher than good. That is as much as it will bear. It ripens early, but I would prefer other varieties.

Mr. FERNALD. Messrs. Perley and Gould of Naples, raise it and esteem it very highly indeed.

Mr. SHAW. It is very good looking and of good size.

Gloria Mundi.—Mr. GILBERT. Is extensively grown in this section and is profitable. Size from medium to large—very even in size. I should say no list of apples is complete without it.

Mr. SHAW. Do you call it hardy?

Mr. GILBERT. Yes. The *Gloria Mundi* of the books is extremely large and tart.

Mr. SHAW. The apple in this vicinity is exceedingly good.

Mr. HAM. I have a few of these trees, some twenty years of age, and I consider it one of the best in its season—I know of no better. It is a good bearer, and on good land the fruit is of large size. Some call it a sweet apple, others acid or tart. It is fine flavored.

Mr. GILBERT. Apples usually denominated neither sweet or sour have no lively flavor, but this one is really very lively—does not have the tame flavor of some apples. In relation to its vigor, I had some scions of Williams' Early and of the *Gloria Mundi*, supposing them to be all of Williams' Early. I grafted them into a thrifty tree, about half of each, and the *Gloria Mundi* has killed out every twig of the Williams' Early so that not a single apple of that variety grows on the tree.

Mr. HAM. If any gentlemen who have not propagated that apple will try it, they will be satisfied. I think there is nothing better in the entire list.

Golden Ball.—Mr. SAWYER. The *Golden Ball* is on our list but not recommended. I have had some correspondence with Mr. Downing about it. He wrote to me for some specimens, and I wrote to several parties who I knew had apples called by that name, with the request that they would send them to him, and from him I learn that there are several distinct apples grown under the name. I sent some specimens from my own town, which he pronounced the true *Golden Ball*, and the person owning the tree considers it a very good apple—valuable for culinary purposes, and the tree is vigorous and hardy. I would recommend the true *Golden Ball* for the southern division of our State.

Mr. GILBERT. The *Golden Ball* grown in this county I am satisfied in a misnomer. At Brunswick I was shown a third apple under the name. From the facts which have been elicited, I should say that the foot-note in our catalogue should be stricken out.

Grand Sachem.—Mr. GILBERT. Grown more in Lincoln County than in other sections. I suggest that it would be best to strike it from the list.

Mr. SAWYER. I don't know that it is grown there.

Mr. GILBERT. I have seen specimens from there. I think Mr. Currier and Mr. Simmons of Waldoboro' grow it.

Gravenstein.—Mr. GILBERT. Is there any difficulty in regard to the hardiness of the Gravenstein?

Mr. POPE. That is a question I was about to ask. We lost one tree, and another gentleman whom I know, lost two. We found one tree in the spring barked entirely from the limbs to the ground. The top seemed to be perfectly thrifty.

Mr. GILBERT. I have had two or three trees that have done the same.

Mr. POPE. I have thought it might be the situation of the tree I spoke of; it was in rather a sheltered position, where it had the full force of the sun in the spring. I have hoped it might be so, for I like the fruit.

Mr. SAWYER. It ought to be hardy. It is a northern fruit. The tree is hardy in Lincoln county.

Mr. GILBERT. It is grown extensively in Nova Scotia, in the vicinity of Annapolis, for shipment. They cannot grow Baldwins there. It is very popular and always sells well in the market.

Mr. SHAW. It is a good apple. I have tried to grow it, but somehow the scions winter-kill. My neighbor, from whom I had the scions, makes no such complaint.

Granite Beauty.—Mr. GILBERT. Not extensively introduced but is highly recommended by those who have tried it. It originated in Weare, N. H. The tree is hardy, and an early and annual bearer, but of slow and irregular growth in the nursery—hence it is better grafted in the tops of vigorous trees than propagated by budding or grafting at the crown. Fruit large, pale yellow, striped and splashed with red. Quality, good. Season, winter, but keeping well into the spring. [See frontispiece.]

Hurlburt.—Mr. GILBERT. I have found that while with some individuals this apple is not highly recommended either as a bearer or for quality, with others it is highly recommended in both these respects. It is quite probable that two varieties have been introduced into the State under this name.

Mr. SAWYER. I think there are two varieties. Some cultivators in Lincoln county recommend it highly and others do not.

Mr. GILBERT. If we could organize a movement *in the bearing season* to determine questions of this kind, it might be of value.

Jefferis.—Mr. GILBERT. Not extensively grown in the State, but those who have tried it say that it is excellent in quality.

Jonathan.—Mr. GILBERT. In about the same category with the Jefferis.

Kilham Hill.—Mr. GILBERT. I think we had better strike it from the list.

Mr. VARNEY. I don't see why it should not be a profitable apple. It is something like the King of Tompkins County and Gravenstein. I know it in Waldo County, where it is a profitable apple.

Mr. SAWYER. It is discarded in the American Catalogue.

King of Tompkins County.—Mr. POPE. A shy bearer.

Mr. VARNEY. A tender tree.

Mr. GILBERT. Great expectations and poor prospects.

King Sweeting.—PRESIDENT GILBERT. Is "rather small" in the description correct?

Mr. SAWYER. In the catalogue we have it marked "small"; should we not say—small to medium?

Mr. VARNEY. I grow it as large as Talman's Sweet. I think the average size is larger than that of the Roxbury Russets here on exhibition.

Mr. POPE. The trouble is that in Sidney they are so anxious to get them into market that they gather them before the seeds are turned. In quality it is much better than the High-top Sweet. I think it is a valuable apple for the market.

It was voted to change "small" to "medium."

Mr. SAWYER. I should say "of good size when well grown."

Loudon Pippin.—Mr. GILBERT. Inserted by wish of Mr. McLaughlin, who considers it a valuable variety.

Mr. SAWYER. In the American catalogue it is changed from "good" to "very good."

Minister.—Mr. GILBERT. As a dessert apple the quality is good. The tree bears well. It is dwarfish in its habit.

Mr. POPE. It is like most of those great bearers, only bears every other year.

Milding.—Mr. GILBERT. Highly recommended by those who have fruited it. When grafted into the branches of other trees I don't know a tree that equals it in growth, and yet it is perfectly hardy.

Mr. VARNEY. That is so.

Mother.—MR. POPE. To bear well it needs high cultivation.

Mountain Sweet.—MR. GILBERT. A new variety not extensively disseminated. Originated in this State and promises well.

Naked Limbed Greening.—MR. GILBERT. The quality of the fruit is not up to a high standard.

Peck's Pleasant.—MR. POPE. Needs high cultivation.

President.—MR. GILBERT. Grown quite extensively in this county. [Androscoggin.] It is very large. The tree is a vigorous grower and quite an abundant bearer, but the apple, like all large fruit, is a little inclined to blow off the tree. When it becomes well ripened the fruit is really very good. It brings a high price in the market on account of its large size.

Primate.—MR. VARNEY. The trees have all proved hardy with me. The fruit is best on dwarf trees. The standards I can't vouch for. It is an excellent apple. Season, summer.

Rambo.—MR. GILBERT. Introduced to some extent everywhere.

Rhode Island Greening.—MR. SMITH. I think it will grow on more soils in Maine, with good cultivation, than any other tree.

MR. GILBERT. I think that remark is strictly applicable.

MR. VARNEY. Perhaps so, but on some soils it is worthless.

MR. BRIGGS. It is an excellent grower.

MR. SMITH. The only objection to it is its color. You can grow them as large as these I exhibit here. It is a rich apple.

MR. POPE. With us when the trees get of fair size the limbs will be gone with canker. The fruit drops badly, too, in the fall, in the wind.

MR. GILBERT. That is true, they drop badly.

Sweet Russet.—MR. GILBERT. Here it is a good apple.

MR. SMITH. Is it inclined to wilt?

MR. GILBERT. A little.

Swaar.—MR. GILBERT. Isn't it best to put that "best." It has not been tried to any great extent in this State, but in the West it is called one of the best.

MR. SAWYER. In the American catalogue it is "best."

Thompson.—MR. GILBERT. There is some confusion in relation to the Thompson. Williams' Favorite was sent out by Mr. Thompson, and in Kennebec county in some way it assumed the name of "Thompson," and is extensively known by that name to-day. It is necessary for us to keep the name on our list to distinguished it from the Williams' Favorite from which it is a different apple in all respects. It originated in Mercer, Me.

Twenty Ounce.—Mr. GILBERT. This has been introduced through New York trees to some extent. I think it stands about as it should.

Wagener.—Mr. SHAW. Does it grow large?

Mr. VARNEY. I call it medium.

Mr. SHAW. I have fruited a tree which I procured for the Wagener, and it is small.

Winthrop Greening.—Mr. SHAW. It stands well where I have seen it.

Mr. GILBERT. The quality is good enough, and it is known in that section (Winthrop) as a good bearer.

Winter White.—Mr. GILBERT. That was inserted at the request of some one in Kennebec county.

Mr. POPE. It is a very popular apple with a few persons in Winthrop.

Mr. GILBERT. Is it grown anywhere outside of Winthrop and Hallowell?

Mr. POPE. I don't know of it anywhere else.

Mr. SAWYER. Mr. Gile of Augusta presented it last year, I think. Is it not probably a synonym for some other variety?

Mr. GILBERT. I think not. I think it was brought by the Vaughns' from England.

Mr. SAWYER. They did not bring seedling fruits; and if they brought it it has a name, and that name is not Winter White.

Mr. VARNEY. If it is a new fruit, we had better keep it on the list and learn its name.

Mr. GILBERT. There is no question but it is an old fruit. I think we had better strike it off.

Mr. SAWYER. If any portion of the people are growing it under a wrong name we ought to retain it until we find the true name, and then give this as a synonym. I should not want to retain the Naked Limbed Greening but for that reason.

Yellow Bellflower.—Mr. GILBERT. "Bishop's Pippin" is a synonym for the Yellow Bellflower. In Nova Scotia it is grown by that name to a large extent, and bears fine fruit. It is grown largely in the northern section of this State. What kind of soil, Mr. Smith, does the Yellow Bellflower require?

Mr. SMITH. I don't know as I can say. It has proved a good annual bearer with me.

Mr. GILBERT. I have a Yellow Bellflower on light, rather dry soil, a perfect tree and perfectly healthy in all respects, and with

the best cultivation I can give I cannot get a bushel of apples from it in a season.

Mr. VARNEY. Pile some clay around it.

Mr. GILBERT. The question arose in my mind whether it did not require a soil similar to that which produces the Roxbury Russet.

Mr. SHAW. I have a tree of that variety that stands in a swale, and it is completely loaded with fruit every other year. The soil is deep and heavy.

Yellow Newtown Pippin.—Mr. SAWYER. At Chicago there was considerable discussion as to the two varieties, Yellow and Green. Mr. Barry of Rochester, N. Y., and Mr. Hovey of Massachusetts, pronounced them the same. Some others said otherwise. Some one else said that the Green was not as good as the other. It is the same as the Albemarle Pippin. There is no doubt as to the quality of the Yellow Newtown Pippin, that it is one of the best apples grown.

Mr. GILBERT. I think in this State it is not a good bearer. It is a very excellent shipping apple from its firmness, which enables it to bear handling.

The lists of other fruits were taken up and considered briefly, and the following changes were made :

NATIVE GRAPES—*Blackhawk* added.

CHERRIES—*Governor Wood*, *Early Purple Guigne* and *Belle Mag-nifique*, added.

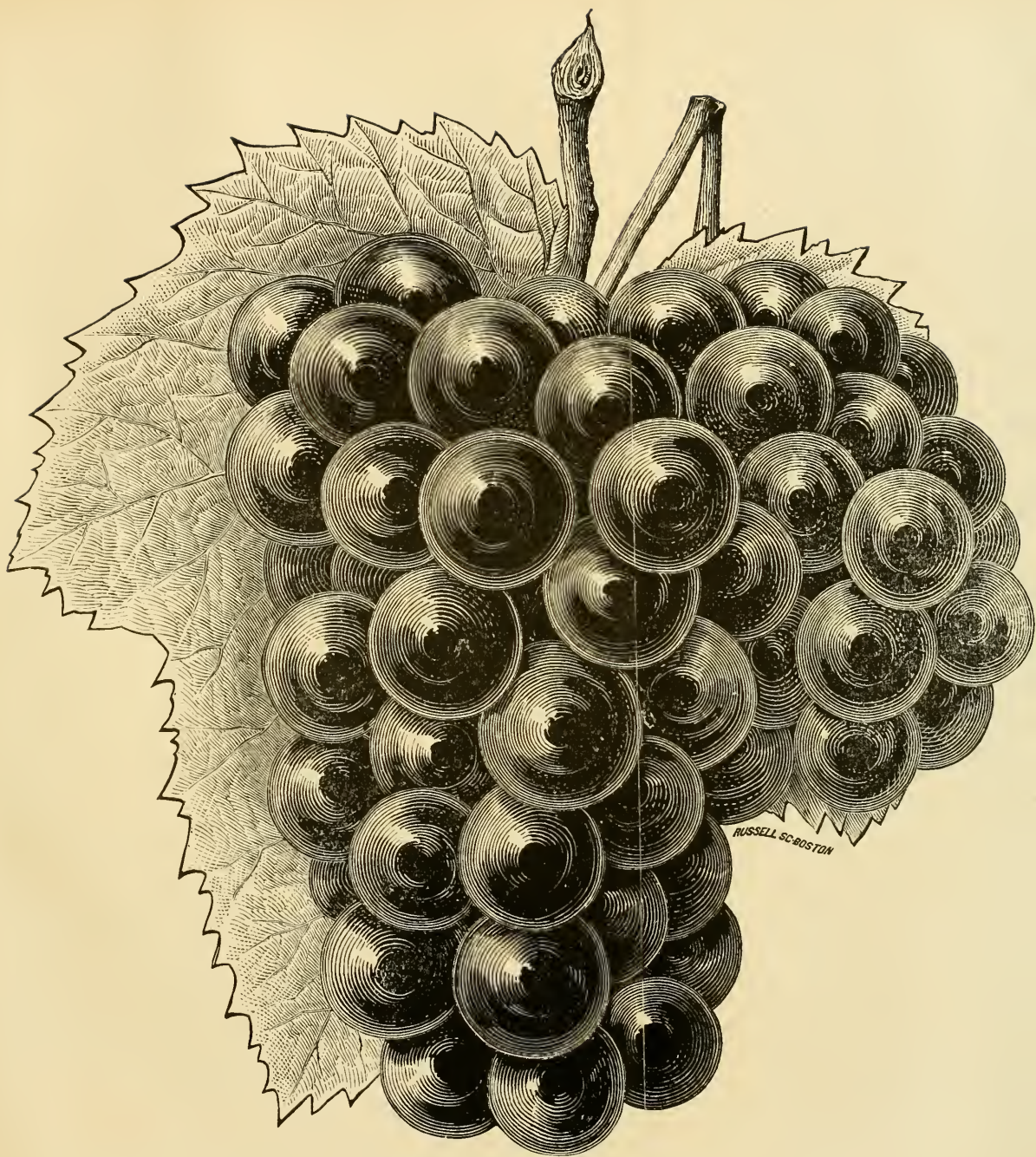
QUINCES—*Orange* and *Angers* added.

Messrs. Charles S. Pope, Henry Ingalls and Joseph Taylor were appointed a committee to prepare a list of fruits for amateur cultivation, and to report the same at a future meeting.

The report of the Corresponding Secretary was presented, and ordered to be published in full with the transactions.

Voted, That the thanks of the Society be tendered to the City Government of Lewiston, for the facilities afforded for holding this meeting ; also to the *Lewiston Journal* for full daily reports of the proceedings ; to the Press of the State generally, for publication of the programme and other notices ; to the Maine Central and Knox & Lincoln Railroads for their liberal concessions in respect to fares of persons attending this meeting, and to the essayists and speakers who have furnished papers and addressed the Society.

Adjourned *sine die*—the evening session being omitted on account of the inclemency of the weather.



THE SALEM GRAPE.

[From an engraving furnished by E. S. Rogers, Salem, Mass.,]

REPORT ON THE EXHIBITION OF FRUIT AT THE WINTER MEETING.

The committee appointed at the Winter Meeting of the Maine State Pomological Society, held at Lewiston, the 22d and 23d of 2d Mo., 1876, to examine and describe the fruit exhibited at that meeting, present the following report:

Eight varieties of apples were exhibited by Z. A. Gilbert of East Turner, viz: some fine specimens of Fall Harvey, R. I. Greening, Talman's Sweet, Northern Spy, Black Oxford, Blue Pearmain and Baldwin, and one specimen of Gravenstein, which, though nearly five months past the usual time of its mature ripeness, was nearly as fresh and fair as when picked from the tree.

Charles Sampson of New Gloucester, presented ten varieties of apples, viz: R. I. Greening, Baldwin, Golden Pippin and Sweet Russet, and six varieties other than the above—the names of which were unknown to the committee,—all very fine apples.

Charles S. Pope of Manchester, presented some fine specimens of King of Tompkins County, Peck's Pleasant and Mother apple; also, for name, one variety from the William Wood Farm, Winthrop.

Several specimens of the Josephine de Malines pear, very excellent, from Samuel Rolfe of Portland.

Alfred Smith of Monmouth, exhibited some very excellent specimens of Roxbury Russets, Baldwins, R. I. Greenings, Yellow Bellflower, "Hooker of Maine,"* Talman's Sweet, and some fine specimens of pears of the Vicar of Winkfield and Glout Morceau varieties.

Joseph Taylor of Belgrade, exhibited some good specimens of apples of the Northern Spy, Blue Pearmain, Jewett's Fine Red and Russet Pearmain varieties, and also "Rome of Maine" and "Beehive," both of the last named being local apples; and three other varieties of fine appearing specimens, the names of which are unknown to the committee, but supposed to be from scions sent to a member of the committee by a friend of his in Western New York. These last specimens had better be further tested before they are recommended for cultivation.

Respectfully submitted,

JOSEPH TAYLOR, }
ALFRED SMITH, } *Committee.*

* The "Hooker Apple," a Maine seedling. Origin, Gardiner.—[A. Smith.]

REPORT OF THE COMMITTEE APPOINTED AT THE WINTER MEETING, ON
PEAR CULTURE.

The Committee appointed to take into consideration "the extent to which it is expedient for the Society to recommend the cultivation of the pear in this State," have attended to the duty assigned them, and beg leave to report:

That from the discussions of the Society and other sources of information (with our own slight experience), we can very confidently recommend the general cultivation of the pear in this State where the conditions are favorable

The pear tree requires care in planting, good soil, good drainage and high cultivation—the trees will not flourish if badly planted in poor soil, and starved.

Our climate is no bar to success, provided care is taken in the selection of varieties. That some failures will occur must be expected, as in all other branches of business; but if beginners will feel their way carefully, planting but few at first, and confining their selection of varieties mainly to the most desirable from the Society's catalogue, they will be satisfied with the results.

Much of the want of success may be fairly attributed to the purchase of worthless trees hawked about the State, often proving untrue to name. Purchases had better be made from some good reliable nurseryman.

As to situation and soil, authorities differ, and each person must use his own judgment. Some claim there must be some good protection to the orchard, while others have had excellent success in the most exposed situations.

The Committee could give other useful hints to beginners, but the limits of the Society's report will not admit of it.

While the Committee recommend pear culture in this State, they would not do it to the exclusion of the apple, which is the surer crop, and of the greatest value to the State.

All of which is respectfully submitted.

T. C. HERSEY,
HENRY McLAUGHLIN, } *Committee.*

REPORT FROM PISCATAQUIS COUNTY.

Extract from a letter of CALVIN CHAMBERLAIN to the Corresponding Secretary, dated
Foxcroft, February 17, 1876.

The past season has not brought any marked changes in the general condition of the fruit interest of this county. Orchards are being set, and trees are seen to die to a considerable extent in each year. Some lose courage thereat, and talk loud against trees and those who sell them. A few keep steadily on, grow a few trees, or buy them, and extend the orchards. We had a short crop of apples, and the price of the best was \$2.00 per bushel at harvest time, but soon fell to \$1.50, and still continues at about that price; and they are yet freely offered in this village.

For the encouragement of nursery and orchard culture, the Piscataquis Central Agricultural Society, last summer, offered premiums payable three years hence. The first premium, on nursery, was \$30.00, and with the troublesome condition attached, that at least two thousand (2,000) grafted trees of approved varieties should be in good condition at the end of the trial term. Several coveted the \$30.00, and the committee having the matter in charge was beset with many propositions for a change of conditions, so that the money might pass without the fearful responsibility of that 2,000 trees. The result is, no applicants are in for the premium.

Previous to the last annual meeting I took occasion to speak favorably of an apple which I obtained in Oneida county, N. Y., under the name of Pound Sour. Last September, while in Utica, I attended the Central N. Y. Fair, holden in that city, and there saw the apple on exhibition under the name of Pound Royal. During the present winter some correspondence with Mr. Charles Downing in relation to this apple, has resulted in clearing up this matter to his satisfaction. In his last letter upon the subject he writes me, Dec. 31st, 1875, and says: "The apples arrived this morning, and I write to say *that* is the Golden Pippin of 'Downing's Fruits,' page 195, second revised edition. It should have been called Large Golden Pippin, to distinguish it from two or three other Golden Pippins."

REPORT OF THE CORRESPONDING SECRETARY,

DR. J. C. WESTON OF BANGOR

Your Corresponding Secretary, in presenting the required annual report, would state that he has not been furnished this year with many or voluminous publications from which he could select materials of special interest, but hopes it will be his privilege to announce hereafter that kindred societies of the United States freely and promptly give us the records of their annual transactions in exchange for our own.

Copies of the Second Annual Report of the Maine State Pomological Society, 1874, were sent to the Secretaries of nearly all of the Pomological and Horticultural Societies of the country; also to the leading Agricultural and Horticultural Journals, and to prominent pomologists.

We are happy to acknowledge that we have already received in exchange the Report, 1873-4, of the Pennsylvania Fruit Growers' Society; the Proceedings, 1875, of the Florida Fruit Growers' Association; the Transactions, 1874, of the Mass Horticultural Society; the Seventh and Eighth Annual Reports, 1873-4 and 1874-5, of the Ohio State Horticultural Society; the Proceedings of the Annual Meetings, 1874 and 1875, of the Western New York Horticultural Society; the Reports, 1873 and 1874, and Monthly Reports of the National Department of Agriculture; the Transactions of Wisconsin Horticultural Society, 1870-74; the Transactions of the Minnesota State Horticultural Society, 1866-74; the Proceedings of the Annual Meeting, 1875, of the Nebraska State Horticultural Society; and the Transactions of the Michigan State Pomological Society for 1871, '72 and '73.

From these, such selections have been made for this report as seem to convey the most useful practical information to the Maine Pomological Society.

One of the most important questions which demands the careful consideration of the pomologist who would succeed in the cultivation of fruit trees, is, **What is the best preparation of ground for an orchard?*"

We are frequently pointed to the healthy and stalwart growth of natural trees as evidence in favor of imitating nature, and against much, if any, artificial preparation of soil. We also find many

* H. M. Engle, Report Penn. Fruit Growers' Society, 1873-4.

healthy, vigorous and productive trees and orchards where the ground had been artificially prepared. On the other hand, we find thousands of trees in artificially prepared ground, as also in nature's broad domain, which are anything but inviting or productive. Between these extremes the problem at the head of my essay is to be solved.

The complexion of soils and location of orchards vary so much without any preparation at the hand of man, that it will account in a large degree for such varied results. With the existence of all these differences, there are comparatively few locations that may not be put in condition to produce some kinds of fruit. A soil that contains the elements necessary for growth of both wood and fruit, is sufficiently porous, or has natural drainage, and is amply protected by forests or timber belts, will require no preparation except such plowing and pulverization as is necessary for an ordinary farm crop. A soil that is sufficiently fertile but too compact, will require thorough plowing and pulverization, and a coat of lime or other material mixed with it that will make it friable and mellow.

There are soils containing all the necessary elements of fertility, but so tenacious and retentive of water that nothing short of thorough underdraining and getting it into a friable condition will put in good order to receive an orchard. Where a soil is disposed to be wet, and is not too tenacious nor too level, it may be put in fair condition by plowing it in ridges at proper distances, and planting the trees thereon. This may be economical, but it is not equal to underdraining. Some soils, such as sand, sandy loam, and gravel, are porous and sufficiently dry, but often lack the elements of fertility. Such should be put in a fertile condition first, after which it will be comparatively easy to get it in order for the planting of trees.

There is a kind of slate land in certain sections of the country, which has proven to be pre-eminently adapted to fruit culture, provided it is well prepared, which cannot be done without thorough plowing and sub-soiling, or trenching. * * This kind of soil is generally rich in the mineral elements necessary to grow fruit, but lacks humus or vegetable matter; consequently, when the latter is added to the said preparation of the soil it is, in my opinion, equal to any for the purpose of fruit culture. Fruit grown on such soil is invariably high colored. We find some of the best apple orchards on rather heavy limestone soil, but very often have

wood growth at the expense of fruit; whereas, on slate, gravel, sand and the like, unprepared, we often see the reverse, *i. e.* fruit crops at the expense of the tree; which proves that an orchard, to be both vigorous and productive, *must* have all the necessary elements and conditions to make both wood and fruit.

Not only is the proper preparation of the soil essential to success, but it is also important to ascertain * “*What is the best method of manuring fruit trees?*”—their appropriate manures, &c.

Chemistry proves to us that the alkaline earths, which, by analysis, are found in the ashes of plants and their fruits, are indispensable to their development, and that if these elements be wanting in the soil itself, to be taken up by the plants and fruits as their constant food, the latter cannot thrive. Other elements, as the vegetable or organic acids, cannot be dispensed with; but the absence of one or more of them will not seriously interrupt growth and development. Different families of plants possess these acids peculiar to themselves, not free, but nearly all combined with alkalis. Tartaric acid, always present in the vine, is found in combination with an alkali as a tartrate, phosphoric acid as a phosphate, malic acid as a malate, silicic acid as silicate, and so on through the series, very few (if any) of the acids being absolutely free or uncombined with its alkali, so that the presence of potash, soda, lime and magnesia in the soil is positively indispensable to the life of all plants, as the carbon, oxygen and nitrogen in the air (the primary elements of the vegetable acids) are also indispensable to their existence. All plants, therefore, must have these alkalis for the support of their vital functions, together with the organic acids generated by the contact of alkalis with the humus, &c., in the soil, or derived from the atmosphere, &c., each after its kind. A plant or its fruit cannot attain perfectness in development if the food necessary for the purpose be absent. These elements are not the same in all plants. Soda is the only alkaline found in marine plants; in others are found both *soda* and *potash*, sometimes *potash* and *lime*, *lime* and *magnesia*, &c. The acids of course vary as a natural sequence.

The whole system of agricultural chemistry depends upon a correct knowledge of the alkaline salts, whether existing in the soil naturally or supplied to it artificially, based upon a knowledge of the wants of each family of plants. Says Baron Leibig, “an empirical system of agriculture has administered the same kind of

* Report Penn. Fruit Growers' Society, 1873-4, page 11—&c.

manures to all plants, or when a selection has been made, it was not based upon a knowledge of their peculiar character and composition." Few are the soils anywhere found that have not these alkaline earths in greater or less amount; but since plants, trees and grasses take up a large amount of the constituent elements of their organization, the soil after a time becomes exhausted and must be re-supplied by the processes of nature or the chemical resources of man. In process of time nature will decompose or disintegrate the rocks holding the alkaline earths, and carbonic acid will combine with them and re-supply the salts. In this and other ways, land left in fallow will recover from exhaustion.

Years ago immense crops of wheat, corn and tobacco were raised in fertile Virginia, but as it is estimated that at least 120 pounds of alkaline earths were carried away every year from each acre of soil, it at last succumbed to the exhaustion. Nature and the farmer's knowledge being unequal to re-supply the lost material, the result has been that millions of acres of these once productive lands in more Northern and Southern States, as well as in Virginia, have been thrown out to be reclaimed by nature in her slow process of restoration in the decaying foliage of the forests for another century. Rotation of crops, land in fallow, and the indiscriminate use of all kinds of manure to overcome the exhaustion and increase the fertility of the soil, have been the means employed from the earliest times; but now we understand each day the laws of nature better, and discover the secrets of her handmaid, organic chemistry. Necessity caused men to apply remedies in sickness indiscriminately and empirically, to-day the developing sciences, chemistry and physiology teach us better ways to use the opportune time to administer and the individual specific to prescribe. When we learn what constitutes good soil to produce standard crops for each family of plants, we shall then look for causes in the *deviation* from the standard, and cure them the same as an educated physician successfully treats a sick man, because he knows what constitutes a man in health.

Much attention has been given of late to the condition of the soil for grain growing purposes, and a brighter day is beginning to dawn through increased intelligence. In the cultivation of fruit trees, fruit growers have given more attention to the "kinds" than to the soil; yet the same laws of nature demand as much attention and study for fruit culture as for cereals. * *

In a treatise on the cultivation and management of fruit trees,

by William Forsythe, F. A. S., published in London in 1802, we have the following instructions on the *renovation of decaying* and fruitless trees. Mr. Forsythe, in thirty years' practice in cultivating, pruning and keeping fruit trees, observed that from natural causes, accidents and mismanagement, they were subject to injuries of various kinds which diminished their fertility or rendered them wholly unproductive. Mr. F.'s mode of operating on fruitless or worn out trees, was severe pruning by heading in the tops and branches, and an immediate application of the following mixture to the body and the end of the pruned branches, laid on with a painter's brush :

One bushel of fresh cow dung, *(strong in potash.)

One-half bushel of lime, (another alkali.)

One-half bushel of wood ashes, (strong in potash.)

Two quarts of river sand, (silica.)

Sufficient urine and soap-suds, (more alkali.)

Sprinkling of the application to the trees with powdered wood ashes and bone dust, (more alkali)

The English government thought so well of this excellent composition that, by act of Parliament, he received four thousand pounds sterling for his discovery. This new system of pruning and heading down, which produced such marked results in restoring trees to fruitfulness with the application of his alkaline mixture, became so popular in England and on the continent, that its fame reached Russia and India, and in these two climates of extreme cold and heat it was applied with equal success to the fruit trees of the respective countries.

It is evident from the perusal of this treatise, that Mr. Forsythe was quite ignorant of the true cause of the effect of his composition. He does not appear to have known that its good effects on diseased and neglected trees in exhausted soils, was owing to the pruning and the action of the potash and other alkalies, and that the application of his compound, or wood ashes and other alkaline manures to the soil about the roots, would have been equally or more efficacious in restoring the trees to health and fruitfulness.

G. B. Boswell, in the transactions of the American Institute of New York, gives the following receipt for a compost to be applied in setting out young trees, for which he is partly indebted to R. L. Pell : three bushels of swamp muck, one bushel night soil, one

* Parenthesis our own.

bushel fine charcoal, one bushel slacked lime, one bushel unleached ashes and one peck of salt. Mix well together, and give half a bushel to a tree at planting. *Half a peck* I should think sufficient.

A. J. Downing, the accomplished pomologist, author of *Downing's Fruits and Fruit Trees of America*, and formerly editor of the *Horticulturist*, has left us his testimony in favor of the application of alkaline manures in the cultivation of fruit. He wrote and published, years ago, the following :

“For old apple orchards, for a soil deficient in lime, recommended a top dressing of lime ; for a middle sized bearing tree, a peck of air slacked lime. To keep an apple orchard in a fruit bearing condition in a soil not calcareous and not congenial to the tree, it should be dressed with *lime* and *ashes*, equal quantities. For pear trees, *peat* or *swamp-muck* and *potash* or *ashes*. A wagon load of *peat* or *swamp-muck* to ten bushels of fresh ashes, mix and let lie a fortnight before using—give each middle sized tree a bushel annually, a newly planted tree a half peck.” As a general compost for fruit trees and vines, we repeat that nothing is equal to *ashes* and *swamp-muck* in combination with other alkiline manures. Almost hundreds of cases can be found through the *Horticulturist* during his life, giving unmistakable evidence of his high estimate of the restorative powers of alkaline manures in their application to exhausted soils.

Mr. J. J. Thomas, in his *American Fruit Culturist*, endorses Mr. Downing fully in his views, by introducing his recommendations in his book, under the head of “Special Manures,” and gives the following as the quantity of lime, potash and phosphate of lime contained respectively in the apple, pear and grape :

Apple—Potash, 16 ; lime, 19 ; phosphate lime, 17.

Pear—Potash, 22 ; lime, 13 ; phosphate lime, 27.

Peach—Potash, 12 ; lime, 23 ; phosphate lime, 21.

Grape—Potash, 21 ; lime, 17 ; phosphate lime, 15.

And adds, the proportions of these ingredients, although not exceeding the quantities found in some other plants, are so large as to show conclusively the importance of a proper supply in the soil. They already exist in all soils adapted to the growth of fruit trees, but their small amount in particular localities, from natural deficiency or from long cultivation, may render their application a matter of the greatest importance. Such applications may be partially made by *common yard manure*, which contains them in

considerable proportion, but *wood ashes*, in which they mostly exist in *large quantities*, will furnish them *more freely* and with more speedy effect; as from the large proportion of *animal matter* in *yard manure* too much *succulent growth*, or even *surfeit*, would result from its abundant and *exclusive application*, an *evil* in *nowise* resulting from the use of ashes. *Leached*, as well as *unleached ashes*, may indeed be applied with great advantage to nearly all fruit trees.

In the first volume of the *Horticulturist*, we have an interesting experiment in the *renovation* of two old pear trees, at the instance of and as advised by Mr. Downing. These trees, which had for years produced only cracked, blighted, worthless fruit, were restored to health and fruitfulness, bearing smooth and fair crops. The change was effected by digging, three feet distant from the tree, a circular trench twenty inches deep, filling it with fresh soil and turf, and intermingling two bushels of scoria from a blacksmith's shop, two bushels of charcoal and two pounds of potash. The charcoal and potash were no doubt the active agents in effecting the change. Potash in restoring to the soil that agent so indispensable to vegetable life, charcoal absorbing and holding in its cells, in a state of high condensation, ninety times its bulk of ammoniacal gas and thirty-five times its volume of carbonic acid gas, forming a medium in which is stored up these rich organic, volatile elements, which are liberated by moisture from time to time, as they may be wanted for trees and plants. Charcoal is one of the most valuable agents, not only as a deodorizer, but as an absorbent of ammonia and carbonic acid gas, and should be mixed with all volatile manure to arrest the escape of these highly valuable elements. I have used it for several years in connection with *poudrette*, ashes, lime, muck, &c., as an application to fruit trees, also to plants, vines and vegetables. I consider it one of my best manures. * * *

One of the chief offices peculiar to all alkalies may be to prepare the food of plants. We know how important silica is to vegetable growth, and potash and soda both perform the office of carrying a soluble silicate whenever wanted.

There must be a reason why fruit trees cease to bear, and decay long before their natural period. As far as we can judge from all the facts, the cause is the absence of proper food, and if the facts of chemistry teach us anything, this defect has its source in a deficiency of alkaline salts in the soil, and may be corrected by sup-

plying this deficiency. This being conceded, each one must be left to exercise his own judgment in the application of fertilizers to his trees and crops, and in this he will be governed by the geological character of his land, whether granite, gneiss, limestone, sandy loam, clay, marl, light sand or alluvial clay deposits, as each of these formations contains more or less of the alkaline salts so essential in vegetable life. He will also be governed by the condition of the soil, whether in a *high* or *low* state of cultivation. On land in "good heart" the same amount of animal, vegetable and mineral manures will not be required as in land exhausted of its active fertilizing elements.

* TOP-DRESSING. *Copied because it seems to be an excellent mode of applying manures to hoed and other crops grown in orchards.*

"Since twenty years ago some radical changes have taken place in the teachings of both scientific men and skillful farmers in regard to the methods of preparing and applying manures to the soil. Formerly, in leading works on agriculture, the subject of top-dressing was either not mentioned or was dismissed with a few crude remarks. Recently, the people abroad and in this country have had their attention called to the matter by numerous allusions to it in their journals on farming and gardening, and by the able discussions of practical tillers of the soil.

To any one giving the least thought to the subject, it will be seen that we have patches of ground in our gardens, lawns, and often extensive fields on our farms, the surface of which should not be disturbed or turned over, sometimes for several years. There are certain stimulants or fertilizers, as the mineral, which all admit will generally exert the best influence on all products of our farms and gardens, if they are spread on the top of the ground. The points of controversy are reached when we come to compare the merits of the two modes of applying barn-yard and animal manures—the covering and the broadcasting—to our fields plowed year after year.

On what special principles should top-dressing be recommended as one to be more generally used?

First. Decomposition of both inorganic and organic substances goes on more rapidly on the surface under the influence of moisture, sunlight and heat; and if the valuable volatile matters in some of our manures can be prevented from escaping into the at-

* By W. C. Whitford, President Milton College, Transactions Wisconsin Horticultural Society, 1874.

mosphere, then their constituents will be more readily prepared for the leaves and the roots of the growing plants.

Second. Some of our manures have the property of absorbing gases from the air, some of which are very important to our green crops, such as oxygen, carbonic acid and ammonia; and this can be most effectually done when these manures are lying upon the surface. These gases when thus absorbed are washed down by the rains with the fine particles of the manures into the ground around the roots to be taken up by them. When they are not thus washed down, they are slowly given off directly under or in contact with the leaves of the plants, and are then taken into the sap by the mouths of these leaves and become a part of the plants themselves.

Third. Most of our crops, such as grasses, grains, clover, shrubs, young trees and vines, are very materially benefitted by applying certain fertilizers to them after they are partially grown. In such a state it is evident that the soil around them cannot be stirred much, or very deeply, in covering the manures which you need to apply to them, without injury to these crops.

Let us first notice the surface application of some mineral fertilizers to our fields and gardens. We will begin with lime. This is found in great abundance in many sections of our State. The principal benefits of the application of lime consists in decomposing and preparing for the roots of the plant the humus, or the organic matters, and the flinty particles of our soil. It contains or absorbs from the atmosphere large quantities of carbonic acid, 44 pounds, out of every 100 pounds, of pure limestone. This it supplies as the principal food to the growing plant. It will hasten the ripening our cultivated crops ten to fourteen days. Its best effects are seen when kept near the surface. It should scarcely ever be mixed with our barnyard manures, in our compost heaps, or as spread on the ground, as it speedily decomposes them, and sends off the nitrogenous compounds. When used in the form of top-dressing, it should be spread on the ground some little time after the barnyard and animal manures are applied to the land. Under favorable circumstances our average crops, during a rotation of four years do not usually carry off more than 250 pounds of lime per acre. Yet this amount is indispensable. Still a larger amount is needed to act directly upon the soil before its decomposed parts are taken up by plants.

Our best experimentors say that lime should be applied some time before the crop is grown, say in the fall of the year. Some recommend harrowing it in with our wheat, particularly the winter. On a potato field it can be sown broadcast after hoeing and on cornfields before or after hoeing. A compost of one bushel of lime and three bushels of the rich top soil is used with excellent effect.

As to gypsum, Dr. Franklin was the first to recommend the use of this fertilizer in this country. He sowed some on a hill-side in a field of grain in the form of the words, "Effects of gypsum," and the rank and stout grain where it was sown, could be seen very plainly, and the words distinctly read. It differs from common lime in having sulphuric acid in the place of carbonic, in combination with pure lime. Sometimes the wonderful effect of this fertilizer is owing to the fact that it supplies exactly the ingredients the cultivated crop needs; and sometimes it stimulates the inactive substances in the soil, and so they are fitted for the plant. In many sections of the Eastern States it has been largely used, especially upon pastures and meadows; and also upon oats, corn and potatoes. Its value lies mainly in two things: first, as a direct nutriment to the plant in furnishing sulphur, oxygen and lime; second, in its power to absorb moisture and the volatile gases, as ammonia, and yield them up as the plant may demand them. A small quantity lying on the ground or near the surface, will act in conveying the valuable vapors from the atmosphere to the crops, to which it yields these under the influence of moisture and heat. On grass and clover lands, its value is due principally to this effect, though in dry weather it takes up the moisture of the dews and the ground, and retains them for the crop. When it ceases to benefit the land, then other manures containing ammonia, phosphoric acid, potash, soda, magnesia and chlorine, should be applied at once, as it may then be known that these ingredients do not exist in the soil, or that they have been exhausted by the crops. The amount required to be sown on the land is not large, and varies with the kinds of soil. We are told that it should always be applied on the green crop and in the spring. In this country it is frequently sown with the seed; or in the case of potatoes, put into the holes with the farmyard manures.

As to salt, the worth of this fertilizer is not generally known in my section of the State. Its use for this purpose is very ancient. In large quantities it is injurious, destroying vegetation. In moderate amounts it is very valuable. The share of ingredients it imparts to the plant is limited, but this is essential. It is composed of chlorine and soda, the latter being taken up readily by our crops. It is useful as mixed with compost heaps, assisting in absorbing the volatile matters. It acts powerfully in decomposing organic substances in the soil. It breaks up the ammonia and the potash in the ground and prepares them for the growing plants. It is found to be destructive of the grub and wire-worm.

It is usually applied as a top-dressing, at the rate of four bushels to an acre to most grain crops. It is particularly useful to wheat, as it makes the stalk stronger and ranker, and the berry bolder, brighter and heavier. It tends to prevent rust, blight and smut. It hastens, undoubtedly, the ripening of the crop by several days; and this advantage is of great account sometimes in this country. It should be sown on the wheat soon after it is harrowed in. Its effects in some recorded instances on most of the grains, particularly wheat, is marvelous. Most of our grasses are benefited by it. Our root crops, as beets, asparagus, potatoes, turnips, etc., sometimes double their products after the proper use of this fertilizer. The great caution to be observed is not to use too great quantities of it. Three bushels of it mixed with five bushels of lime, make an excellent manure for a single acre."

The good effects of salt as a manure for the pear.—Mr. Willard, a nurseryman of Rochester, N. Y., testifies that—"The best preventive he had yet discovered for pear blight, that caused so much damage, was a free use of salt upon the ground, and especially in the vicinity of the trees where the roots could absorb it. He had seen eight and even ten pounds applied around a single tree, and it had caused immense yields of fruit. So well was he convinced of the necessity of the use of salt for the benefit of the pear tree, that he had prescribed it for trees that appeared sickly and almost dying, and they had recuperated, and not only become again vigorous, but fruitful to a degree that astonished all who had before known them in their sickly condition. The conclusion he had arrived at was that the pear required a large amount of salt for healthy growth and for productiveness."

* Transactions Wisconsin Horticultural Society for 1871.

“As to potash in our ashes. My observations have been confined mainly to its effects upon the products of our gardens, as potatoes, corn, peas, cucumbers, tomatoes, beets, etc. I selected one of the richest places I have seen on our prairies, and applied year after year, principally to the surface, all the ashes made from several fires; and my garden stuffs used to be much larger in quantity and better in quality than any raised by my neighbors. The ash of oak is rich in the following constituents: potash, soda, lime, magnesia, phosphoric acid, with other substances in smaller quantities, such as silica, oxide of iron, gypsum and common salt, all of which are readily taken up by the growing plant. Like salt and lime, ashes run out the poor grasses and destroy the weeds. Their effect is quite lasting. Many believe that ashes should be first leached before applied. This is a serious mistake. They lose on an average not far from two-thirds of their strength. Ashes can be made valuable in the place of gypsum in our compost heaps, and in tanks for collecting the liquid excrements of our domestic animals.

When oats lodge, as they are apt to do upon manured lands, an application of ashes usually saves the crop. While the potash in the ashes is directly absorbed by the plant, it is a powerful agent in dissolving silex or sand, so that it is fitted to be used by the crop and give strength to the straw. Every bushel of ashes is counted worth a half dollar in this county for fertilizing purposes, and the mode of best applying them should be better understood.

In noticing, in the next place, the use of vegetable and animal manures, I would not forget that in all probability the plowing under of dung mixed with straw, is the most profitable use we can make of these materials in certain classes of soils. Take our stiff clays or clay loams, and, in addition to strong fertilizers, they need the fermentation of our fresh barn-yard manures in contact with their particles. The heat and the chemical action caused by this process not only pulverizes the heavy soil, but prepares its constituents to be taken up by the roots of the plants. Besides, these coarse manures hold up several inches of the ground, so that the atmosphere can penetrate it and supply it with such gases as oxygen, nitrogen and carbonic acid, to be imparted to the crop grown upon it. The sunlight is also able to act at some depth, much better upon the soil, and upon the delicate fibres of the plants growing upon it. * * *

We now reach the question, what are the best modes of apply-

ing our barn-yard manures to the surface of the soil? Certainly the course so often pursued, of permitting our sheep, cattle and horses to roam over our fields during the fall and winter, and drop their excrements upon the ground, is the most wasteful. In this way, as in spreading upon the bare fields broadcast, half rotten, or fresh dung, unmixed with mineral substances which fix and hold its vapors, the ammoniacal gases escape into the air, and the saline matters are washed away by the rains. Besides, the grasses or young grain crops are apt to grow in a rank form where these droppings are made.

The conviction is growing among farmers that our grass and clover fields should be allowed to remain longer in their seeded state than we are accustomed to allow them. To these our farm manures can best be applied in the following form: Secure the complete fermentation of these fertilizers, so that the organic acids in them will absorb the volatile substances. This can always be done by fall; and with sufficient care the winter supply can be made ready by the middle of spring. In my judgment, the fall application is preferable. The foul seeds in the manure will be apt to sprout before winter, and be destroyed by the cold weather. The covering will stimulate the grasses and clover during the fall, producing larger leaves and stronger roots to resist the action of the frosts and severe winds of our winters; and it will form a considerable protection during that season to the plants themselves. This course of broad-casting in the fall is doubtless the best one to pursue when you wish to prepare the pasture or meadow for a corn crop to be followed by wheat. After the grasses have been stimulated or strengthened in this way, they can be turned over in the spring for the corn; and not only will the sod be full of roots, but their roots will have drawn up during the fall, and kept near the surface, some of the minerals and gases which may have sunk quite deep in the soil. * * *

In our sandy soils, while it is doubtless best to plow in well rotted manures just before the seed is sown or planted, the application of the same kind of manures to the surface, if the season is somewhat moist, is recommended to be done after the crop has obtained a fair start. But it is my opinion that the most profitable method, all things considered, of top-dressing with our common manures, is to apply them in the liquid form from a cart or machine made for that purpose. Large tanks can be constructed at our barns just as rain-water cisterns are made, into which all

the excrements of our animals can be turned. If the urine does not supply enough liquid to dissolve the solid manure, water can be poured in as caught from the roof of the barns, or pumped from the wells. To prevent the escape of the volatile matters, handfuls of gypsum and other fixing minerals can now and then be thrown on the surface of the decomposing mass. Then the rich liquid can be pumped out and distributed just at the times the growing plant demands the fertilizers. This mode has been pursued with excellent results by Mr. Mechi, in England, and by farmers in New Jersey. The special advantages are apparent. Besides furnishing the manures at the proper time, they are in a condition to be promptly absorbed by the roots and the leaves of the plants, as they are dissolved in water, and each plant can select from the liquid the ingredients it most needs.

A single fact ought to convince us that this is a superior mode. Our vegetation can draw from the atmosphere all the principal substances which it requires for its growth, except nitrogen and phosphorus and their compounds. These must be furnished from the soil, or from the liquids which come in contact with the roots. While the nitrogen or its compounds, ammonia and nitric acid, are not found in great abundance in our crops, yet they are very essential to their growth; and phosphoric acid constitutes from seven to forty-nine per cent. of our most common field and garden products. These constituents are found in the urine of animals, and are absorbed and retained in the liquids and the minerals put into the tanks at the barns."

Deep Planting.—One of the most common mistakes practiced by the novice in fruit culture is that of *deep planting*. This error applies to all fruit trees alike, pear, apple, peach, plum, cherry, as well as to ornamental trees and shrubbery, to all of which it is equally fatal. The trees have barely lived, not thriven after such a plain violation of the laws of vegetable life and growth.

*"Now the operation of planting may be very properly classed into three distinct systems: First, planting justly consists in placing the tree rather shallower than it stood before its removal. This is one of the distinctive features of an intelligent planter. Secondly, I should call the *setting* operation, which might properly be entitled the post-hole process, for even in the lamented Downing's time, that close observer of nature wrote, 'Many persons

* President Hooper's Annual Address, Pa. Fruit Growers' Society, pp. 28 and 29.

plant a tree as they would a post,' clearly pointing out the evil of setting them too deeply. And the third system might be termed the *burying* process where the roots are buried a long way below the surface, and the tree, in consequence, is sometimes as effectually killed as if it had previously been a living member of the animal kingdom.

Roots, in a general classification, are of two kinds. First, the young and tender rootlet, composed entirely of cells, and which are exclusively the feeders of the tree. These are found in the greatest abundance near the surface of the ground, in fact rambling about immediately beneath the surface in search of their proper food. The second class of roots are those of one or more years growth, and as their bark becomes in a manner tough, and almost non-porous, and the ligneous tissue of little wood bundles commence to form, they are no longer tree-feeders, but act as supports to preserve the body erect and firm. They certainly serve another useful purpose—that of conveying the food to the main trunk of the tree, and thence throughout its whole structure; so that the gardener, who buries his roots several inches below the surface, robs them of their proper nutriment and debars them from all communication with the atmosphere, hence their untimely death. One of the best illustrations of this fact may be tested in setting out raspberries, a fruit more particular in its choice of planting than probably any other. Let the doubter of this fact plant two rows side by side, the one merely set on the surface, with the roots covered lightly with soil, the other row planted deeply below the surface. One test of this character I think will prove sufficient to show the former method to be much the superior one. I have frequently noticed very old trees killed by merely filling the earth around them, and burying the surface or fibrous roots deeply in the soil.

Another fruitful source of failure results from the practice of placing fresh organic manures directly in contact with tender young roots. As before stated, roots cannot eat their food like an animal; it must undergo a chemical change and be converted into a soluble, and then into a volatile state before it can be of use; so that the proper situation for applying our fertilizers is always on the surface, and not beneath it. And why? Simply because the action of the rain and frosts disintegrate it, and then in a soluble state it is carried down to the feeders, whence it is taken up into the tree. My principal objection to placing manures in immediate

contact with the roots, is that numerous forms of *fungus*, many of which are very destructive, will be generated and reproduced upon the tree, where they find a home, and carry death and destruction to the living organism, from which they obtain an existence."

Extreme Variations of Temperature.—*“The great obstacle in our section to the successful cultivation of fruit is undoubtedly the constant liability to extreme variations of temperature. In an orchard house we have this matter entirely under control, to regulate as we please, but outside it is not so easily done. Two or three weeks ago, January, 1874, we had spring weather sufficient to start the buds of our fruit and many other trees, and they are often destroyed in this way in mid-winter, when after being swelled almost ready to burst, a change of thirty to forty degrees occurs in a few hours, often proving fatal. Then, again, fruit crops are lost by a continuance of wet weather in the spring, and in a particular condition of the blossom, which interferes with the natural elasticity of the pollen, so that there is no proper connection between stamens and pistils. The dry spring of 1872, on the other extreme, was the most favorable to bud development we have had for many years, and such crops of apples have hardly ever before been gathered. Among remedies to counteract these atmospheric changes, there are two or three worthy of notice. First, instead of pruning up to high standards, and exposing naked trunks to our hot suns, it may be an improvement in the management of all fruit trees to encourage more the dwarf style, and allow branches to start out two or three feet from the ground. This will have another advantage, by promoting easier picking of the fruit and the avoidance of some bruises in falling. When the other system of high trunks is adopted, a small quantity of rye straw tied perpendicularly around the trunk, will reflect the heat of the sun, keep it more moist, and we have found it especially valuable to the cherry. Another remedy is within our reach, which will probably prove more effective than anything else, and that is the planting of evergreens on the north side of fruit orchards as shelter belts, and also in a few places through the orchard, but not so close to the trees as to injure them by shade or the spread of their roots. There is one tree, and only one, that we know of, so wonderfully adapted for this purpose, grow-

* Paschall Davis, Pa. Fruit Growers' Soc. pp. 102 and 103 ; Report 1873-4.

ing and thriving in any soil, perfectly hardy, a rapid grower, grows denser every year, and making in a short time when planted in hedge row, about five feet apart, an almost impervious mass of green foliage, highly ornamental and an effectual protection against driving storms and high winds. We allude of course to the Norway Spruce, (*Abies excelsa*.) We have such a row, about one hundred feet long, on the north side of our garden, and have had full experience of its advantages; our forcing frames for vegetables are on the south side of it, and we think the temperature, owing to its proximity, is several degrees warmer than forty to fifty feet distant. A third remedy within our resources, would appear to be an effective mulching, under pear trees at least, apples and some others being not so much affected by the atmospheric changes alluded to. This mulch keeps the soil damp, at an even temperature, and greatly contributes to health and fruitfulness. The material for mulching is not important, whether hay, weeds, chips, shavings; the cheapest and best being that which is most accessible. We have seen the very best results from mulching, and in one case, two large pear trees which had not borne for several years, bore a plentiful crop after being mulched within a space of about five feet diameter, with such stones as could be gathered from the fields."

Pruning.—*“Pruning should never be attempted by the inexperienced, except under the direction of a practical teacher, for otherwise they are more likely to do harm than good. We sometimes see in suburban gardens, fruit trees, especially pear trees, which have made good healthy shoots from one to three feet in length, headed down as squarely as if the pruner had been trimming a hedge; and as a consequence, a thick, bushy head of young wood, instead of a well shaped head formed by thinning regularly, cutting out some of the shoots altogether, and shortening those left according to their strength. An experienced pruner, by taking a glance at a young tree, can easily see what buds should be removed and what should be left, and can, in a few minutes, prune it with his thumb-nail, so that the tree will require little more care for the season. Trees thus managed will have few large limbs requiring to be cut away. Many trees are pruned too severely, even by practical men, while others are left almost in a state of nature by the inexperienced.

* Paper on Tree Culture, by James Cruickshanks,—Transactions Mass. Horticultural Society, Part I, 1874.

In regard to the time of pruning there is a great diversity of opinion even among experienced men, the time recommended ranging from midwinter to midsummer, some implying that doing the work well is of more importance than the time of doing. When trees are pruned in winter in a northern climate, the bark will sometimes crack open and make a bad wound, which will not heal properly. I prefer to do such work any time from the first of April to the first of June; the sap is then flowing; the alburnum forms a callosity, and the healing process commences at once. The next best time is when the autumn growth is rapid and vigorous."

The proper time for gathering fruit.—* "It is well known by observing horticulturists, that winter fruit may become over-ripe while yet hanging on the tree, so that its season is advanced. Such was the case during the very warm and late fall of 1870; and the following winter there was a complaint all through the country that fruit could not be kept. In some places it was gone before New Year. There is a time in the life of fruit when its growth is complete—when it will receive nothing further from the tree. It is then tree-ripe. Shortly after begins after-ripening, a chemical change, whereby the starch, abundant in the unripe or green fruit, is transformed into sugar. At the completion of this saccharine change the fruit is in the best condition for use. But almost immediately putrefaction sets in, first dissipating the volatile aroma and destroying the delicate flavor, and finally converting the grateful sugar into an unwholesome acid and consuming the very tissues of the fruit. Though a low temperature and dry atmosphere may sometimes retard this change, yet so easy and rapid is its progress, that efforts to preserve the fruit after it has become ripe for use, are of little avail. But the progress of the first change, the after-ripening, may be so delayed as to require several months for its accomplishment. It is done by taking the fruit from the tree at the moment of its maturity, and keeping it in a low, even temperature, in a dry, pure atmosphere, and secluded from the light. Fruit houses are constructed, where these conditions are secured almost in perfection; where the thermometer, for instance, does not rise above 34° for months together, and fruit kept in them has barely ripened for the late spring market."

* Department of Agriculture, Report 1873, page 471.

Preservation of apples in store.—*“ Mr. Calvin Pitcher of Belfast, Maine, a well known apple-grower, who has forty acres of orchard mostly in bearing, keeps his apples in good condition and flavor, from harvest time till ensuing summer, by exposing the fruit daily to a free circulation of air through the place of storage. He stored for keeping 1,200 bushels of Baldwins of the crop of 1872, and disposed of the last lot in midsummer of 1873, at prices ranging from \$1 to \$2 per bushel.”

I have, in Bangor, Me., a dry, well ventilated cellar, with a screened north window which is constantly open during the warm season, and is opened in the winter whenever the thermometer rises above 32°, near which I have kept Roxbury Russets sound until the next winter, although they shrivel and lose their crispness and become somewhat insipid during the heat of summer.

The cultivation of the Tomato in gardens.—About twenty years ago, when visiting (in May) the premises of J. C. Green, Staten Island, N. Y., under the charge of his accomplished English gardener, William Chorlton, I noticed in a small hot-house constructed for the purpose, tomato vines loaded with ripening fruit. The plant was so trained under the glass that it had grown many feet in length in a single stem, with no side branches; and the abundant clusters hung down at short distances from each other like pendant bunches of grapes, presenting a most beautiful spectacle.

It then occurred to me that similar training might be applied to the growing tomato in the garden, with equally successful results. Accordingly, stakes seven or eight feet long were inserted in the ground, the last of May, three feet apart, in a warm, sheltered location, and strong tomato plants were procured which had been started under glass and contained one or two blossom buds. These were planted near the stakes. The plant was then tied to the stake with listing, and all the side branches which had pushed at the axillæ or angles formed by the separation of the leaves, were pinched or cut out with scissors, so as to compel the plant to grow in a single stem; and every week during the season these branches are removed, and the stems from time to time are tied to the stake. When a sufficient number of clusters have formed, the remainder may be removed so as to concentrate the whole energies of the plant to the growth and ripening of the remaining tomatoes; and the heaviest bunches may need to be supported by tying them

to the stakes. By this method the ripening of the tomato is accelerated, and its flavor is improved, because every part of the plant is exposed to the free action of the sun and air. It is not soiled by coming in contact with the ground; is not so apt to decay, and more ripe tomatoes can be raised in a limited space; but it requires constant care and industry. Still, it will pay for the extra labor, as we and others have ascertained by the experience of many years.

Among all the tomatoes tried, the Trophy has been the most satisfactory. It is very large, solid, quite smooth, productive, and of excellent quality. It ripens first every other part except a green disc around the stem, which is the last to color. The only objection to it is its late maturity, but this may be obviated by starting it in the house or hot-bed in March.

The Hathaway's Excelsior and Conqueror are about ten days earlier. The Hathaway's Excelsior is of medium size, very smooth, solid, productive and good. The Conqueror, too, is of medium size and is satisfactory in color, shape and quality. These three kinds, after trial in this city, can be confidently recommended as the best for home use and for market. And by selecting and reserving every year the earliest, smoothest and largest, their good qualities may long be maintained, and they may even be improved.

The cultivation of Peas for Family Use.—After trial for a score of years we have found the following method of raising peas in a small space the most remunerative and satisfactory:

Dig trenches in a warm sheltered location, soon after the frost leaves the ground, about one and a half feet wide and three feet apart, fill the bottom with old compost and cover the manure with loam, upon which sow the peas very thickly and cover them six inches deep. This depth of covering has been ascertained to be the best, after a trial of different depths from six inches to one foot in a garden of light friable loam.

After the first weeding, insert in the ground a row of sticks on each side of the trenches, or rows, so that the tops of the sticks shall be at least five feet above the surface of the ground.

The advantages of this mode of cultivation are, that this vegetable comes up strong and vigorous, is not preyed upon by fowls and pigeons, is not so easily pulled up, is not so much affected by the droughts of summer, is more prolific and furnishes peas for a longer season, or about three weeks.

A few of some earlier variety may be used for early use, but of all the different kinds tested, the Champion of England is the most desirable, the most popular. It attains by this method a height of five or six feet, is hardy, productive, long in bearing, and is of delicious quality from first to last. No other kind surpasses it, and it cannot be too highly recommended.

CATALOGUE OF FRUITS OF THE STATE OF MAINE.

AS REVISED AT THE WINTER MEETING, FEB. 22-3, 1876.

Plan of the Catalogue.

The names of varieties are given according to the nomenclature adopted by the Society, which is substantially that of "Downing's Fruits and Fruit Trees of America." A few leading synonyms are given, and these are placed in *italics* immediately under the name adopted by the Society.

The State is divided into three divisions, designated as the Northern, Central and Southern Divisions.

The northern division embraces northern Oxford, Franklin, Somerset, Piscataquis, Penobscot and Aroostook counties.

The central division embraces the remainder of Oxford, and Androscoggin, Kennebec, Waldo, Hancock, and Washington counties.

The southern division embraces Cumberland, Sagadahoc, Lincoln, Knox and York counties.

The explanation of the abbreviations and signs used in the several tabular columns is prefixed to the list of varieties in each of the respective classes of fruits.

Cultivators are requested to note carefully any errors which may be found in the catalogue, or any well founded opinions derived from their observation and experience differing from the conclusions therein indicated, in order to report the same at future meetings of the Society, with the view to make the catalogue as nearly perfect as possible.

I — APPLES.

EXPLANATION OF ABBREVIATIONS AND SIGNS.

In the column of "Size" l stands for large; m. for medium, and s for small. In the column of "Quality" b. signifies best; v. g. very good; g. good, and p poor. In the column of "Use" C. stands for cooking; F. family use—cooking, baking, &c ; D. desert, and M. market. In the column of "Season" S signifies summer; E. A. early autumn; A. autumn; L. A. late autumn; E. W. early winter; W. winter, and Sp. spring. In the columns devoted to the several divisions, h. r. signifies highly recommended; r. recommended; † not recommended; ? introduced but not fully and extensively tested; blank, nothing reliable known of the variety in the division under which such blank is found.

It should be borne in mind that any recommendation is for the special use designated in the column of "Use."

CATALOGUE

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division
1	Alexander.....	l.	p.	C.	A.	h. r.
2	American Summer Pearmain.....	m.	b.	D.	E. A.	-
3	American Golden Russet..... <i>Golden Russet.</i>	s.	b.	D.	E. A.	-
4	American Golden Pippin.....	m.	v. g.	-	W.	-
5	Baldwin.....	m.	g.	M.	W.	†
6	Beauty of Kent.....	l.	p.	M.	W.	-
7	Benoni.....	m.	v. g.	D.	E. A.	r.
8	Black Oxford.....	s.	g.	-	L. W.	r.
9	Blue Pearmain.....	l.	v. g.	M.	E. W.	-
10	Brigg's Auburn.....	l.	v. g.	D.	A.	-
11	Canada Reinette.....	l.	v. g.	M.	W.	h. r.
12	Cole's Quince.....	l.	b.	D.	S.	h. r.
13	Congress.....	l.	g.	M.	A.	-
14	Danvers Winter Sweet.....	m.	g.	F.	L. W.	-
15	Dean..... <i>Nine Ounce.</i>	s.	b.	D.	A.	h. r.
16	Duchess of Oldenburg..... <i>New Brunswick</i>	l. -	g. -	C. -	A. -	h. r. -
17	Early Harvest.....	m.	v. g.	D. C.	S.	-
18	Early Strawberry.....	s.	v. g.	D.	S.	-
19	Early Pennoek.....	m.	b.	D.	A.	-
20	English Sweet..... <i>Ramsdell's Red Sweet.</i>	m.	v. g.	M.	E. W.	r.
21	Esopus Spitzenburg.....	m.	v. g.	M.	W.	†
22	English Russet.....	m.	g.	M.	W.	r.
23	English Russet..... <i>Poughkeepsie Russet.</i>	s.	v. g.	M.	Sp.	-
24	Fameuse.....	s.	v. g.	D.	E. W.	h. r.
25	Fall Harvey..... <i>Harvey.</i>	l.	g.	M.	L. A.	r.
26	Fall Pippin.....	l.	v. g.	M.	E. W.	r.

OF APPLES.

Number.	Central Division.	Southern Division.	REMARKS.
1	†	†	Hardy, productive, and showy. Succeeds well in high latitudes.
2	-	-	Not extensively grown. Limited trial proves well. In Kennebec reported a good bearer.
3	r.	r.	Excellent dessert apple. Prolific. Several varieties are erroneously grown under this name.
4	-	?	An old variety. Never extensively tried in this State.
5	h. r.	h. r.	Tender—should be planted on high land.
6	?	?	
7	r.	r.	Highly recommended by many.
8	†	†	Hardy and productive—inclined to overbear. Not good for cooking, hence not popular in market.
9	r.	r.	Reported by some to succeed well in Northern Division.
10	r.	-	A native of Androscoggin county. Popular wherever tried.
11	-	-	Hardy. Succeeds well where tried in Aroostook county.
12	r.	r.	
13	r.	-	
14	†	†	A late keeping sweet apple—not very popular. Has been generally superseded by other varieties.
15	r.	?	A popular apple wherever known. Productive.
16	r.	?	Hardy in Northern Division. For extreme north cannot be too highly commended.
-	r.	-	Claimed by some to be a distinct variety—a seedling of Duchess of Oldenburg.
17	r.	r.	Under good cultivation one of the most desirable early apples. Quite tart unless fully ripe.
18	r.	r.	
19	h. r.	-	One of the most popular in market where known, as a dessert apple. Good bearer.
20	?	-	Popular in some sections. Not extensively tested in Maine.—Recommended by those who have tried it.
21	†	†	Excellent, but not productive enough to be recommended. Extensively tried, yet not popular when profit is the test.
22	r.	r.	This is not the English Russet of the books. Good grower—productive. Quality hardly “good.”
23	r.	r.	A valuable late keeper. Not so large as Roxbury Russet, but succeeds on soils where that fails.
24	r.	r.	Very hardy.
25	r.	r.	Supposed to be identical with Harvey. A fine fruit. Succeeds well in Northern Oxford and in Franklin.
26	-	?	

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
27	Fall Jenneeting.....	l.	v. g.	M.	A.	-
28	Foundling	m.	g.	D.	A.	-
29	Franklin Sweet.....	l.	b.	F.	A.	-
30	Garden Royal.....	s.	b.	D.	A.	-
31	Gloria Mundi.....	l.	v. g.	D. M.	A.	-
32	Golden Ball	l.	g.	C. M.	E. W.	†
33	Gravenstein.....	m.	v. g.	C. M.	A.	h. r.
34	Granite Beauty.....	l.	v. g.	M.	W.	-
35	Hightop Sweet.....	s.	v. g.	F.	A.	r.
36	Hoyt Sweet.....	m.	b.	F.	W.	-
37	Hubbardston Nonsuch	m.	b.	F. M.	E. W.	h. r.
38	Hurlbut.....	m.	v. g.	M.	W.	-
39	Jewett's Fine Red..... <i>Nodhead.</i>	s.	b.	D.	L. A.	r.
40	Jefferis	m.	v. g.	D.	A.	-
41	Jonathan.....	m.	v. g.	D.	W.	-
42	Kilham Hill.....	m.	g.	M.	W.	-
43	King of Tompkins County.....	l.	b.	M.	W.	?
44	King Sweeting.....	m.	b.	F.	S.	h. r.
45	Large Yellow Bough..... <i>Sweet Bough.</i>	l.	g.	M.	S.	-
46	Loudon Pippin.....	l.	g.	M.	W.	?
47	Maiden's Blush.....	m.	g.	M.	A.	-
48	Minister	m.	v. g.	D. M.	W.	-
49	Milding.....	l.	v. g.	M.	W.	-
50	Moses Wood.....	m.	v. g.	C. D.	S.	-
51	Mother	m.	b.	D.	E. W.	-
52	Mountain Sweet.....	m.	g.	M.	W.	-
53	Naked-limbed Greening.....	m.	g.	M.	W.	h. r.
54	Northern Spy.....	l.	b.	M. D.	W.	r.
55	Orange Sweet.....	m.	v. g.	M.	A.	r.

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
27	?	-	Quite extensively introduced with early importations of New York nursery stock.
28	?	?	
29	r.	r.	An excellent sweet apple for family use.
30	r.	r.	Can hardly be recommended for general cultivation. Too small for market.
31	h. r.	-	Not that of the books. Extensively grown in the central part of the State, and wherever grown is a popular apple.
32	†	r.	Two or more varieties are grown in the State under this name. The one here described is the true Golden Ball of Downing. An early and annual bearer; tree vigorous and hardy. The description in the first catalogue was erroneous.
33	h. r.	h. r.	Reported a shy bearer in Piscataquis.
34	?	?	Not extensively introduced. (See page 128.)
35	h. r.	h. r.	
36	?	?	An excellent winter sweet apple.
37	h. r.	h. r.	
38	r.	r.	
39	r.	r.	Under high cultivation profitable—otherwise fruit imperfect.
40	-	?	Not extensively grown in this State.
41	-	?	Excellent dessert apple. Not much grown in this State.
42	†	†	Not generally popular.
43	?	?	Is not fully proved. With many does not prove desirable.
44	h. r.	h. r.	Origin, Sidney, Maine. Valuable for family use.
45	r.	r.	Valuable chiefly because so early. When fully ripe quality "very good."
46	-	-	
47	†	-	A very handsome apple.
48	r.	r.	An early, great, and continuous bearer.
49	?	-	A new variety from New Hampshire. Promises well.
50	r.	r.	
51	r.	r.	A choice dessert apple. Tree considered a little tender, though Cole calls it perfectly hardy.
52	r.	-	A new variety. Origin, Greene, Me. Promising.
53	h. r.	-	Grown extensively in Waldo county.
54	h. r.	h. r.	Slow to come into bearing, but when it does, under high cultivation, proves desirable.
55	r.	-	Highly recommended by many.

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
56	Peck's Pleasant	m.	v. g.	M.	W.	-
57	Porter.....	m.	v. g.	M.	A.	r.
58	President	l.	g.	M.	A.	-
59	Primate	m.	b.	D.	S.	-
60	Pumpkin Sweet.	l.	b.	F.	L. A.	r.
61	Rambo.....	m.	v. g.	M.	W.	-
62	Red Astrachan.....	m.	v. g.	F. M.	S.	h. r.
63	Red Canada	m.	v. g.	-	W.	†
	<i>Old Nonsuch.</i>					
64	Ribston Pippin	m.	v. g.	D. M.	W.	-
65	Rhode Island Greening	l.	b.	M.	W.	†
66	Roxbury Russet.....	m.	g.	M.	Sp.	†
67	Sarah	l.	g.	C.	A.	r.
68	Sops of Wine.....	m.	g.	M.	S.	r.
	<i>Bell's Early.</i>					
69	Somerset.....	l.	b.	D. M.	A.	h. r.
70	Starkey.....	m.	b.	D. M.	L. A.	-
71	Superb Sweet.....	m.	b.	D. M.	A.	-
72	Sweet Russet.....	l.	v. g.	F. M.	E. W.	-
73	Sweet and Sour.....	l.	v. g.	F.	W.	-
74	Swaar.....	l.	v. g.	M.	W.	?
75	Summer Sweet Paradise.....	l.	v. g.	F. M.	E. A.	-
76	Talman's Sweet.....	m.	v. g.	F. M.	W.	h. r.
77	Tetofsky	s.	b.	D.	S.	h. r.
78	Thompson.....	m.	v. g.	M.	E. A.	†
79	Twenty Ounce	l.	p.	C.	L. A.	†
	<i>Cayuga Red Streak.</i>					

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
56	?	?	
57	h. r.	h. r.	
58	r.	r.	
59	r.	r.	
60	h. r.	h. r.	Good for baking,—very sweet. Also good market apple. Succeeds well in portions of Northern Division.
61	?	?	Popular in the West. Not fully proved here.
62	h. r.	h. r.	Popular everywhere. Quite tart unless fully ripe.
63	†	†	Not as profitable as many other newer varieties.
64	†	†	Not universally profitable. In some localities proves a good bearer.
65	h. r.	h. r.	
66	r.	r.	Cannot be generally recommended for all localities. On soils adapted to it, proves one of the most profitable. On other soils it is a very poor bearer. Needs high cultivation.
67	—	—	Native of Wilton. Great bearer.
68	r.	r.	Extensively grown under the synonym. Hardy, productive and profitable
69	h. r.	h. r.	Native of Mercer. Showy. Fruit every way valuable. Said by some to drop badly.
70	h. r.	?	Native of Vassalboro', where it is extensively grown, and called one of the most profitable. Quality among the best.
71	r.	—	An excellent apple, though not extensively grown.
72	?	?	There are many kinds grown under this name, with nothing to recommend them but their late keeping and their exceeding sweetness. This variety is large and has much to recommend it as an early winter sweet apple. Good for baking.
73	—	—	This variety grows with sections of sweet alternating with sour. Choice for dessert. Grown chiefly as a curiosity.
74	?	?	
75	?	—	An old variety. A desirable early sweet apple. Not widely grown.
76	h. r.	h. r.	More extensively grown than any other winter sweet apple. Tree hardy, prolific.
77	r.	r.	Tree hardy everywhere.
78	†	†	A good fruit Tree not a free grower nor abundant bearer, and for these reasons cannot be recommended.
79	†	†	Large, coarse, acid, not rich.

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
80	Wagener.....	m.	g.	M.	W.	-
81	Williams' Favorite	l.	g.	M.	S.	r.
82	Winthrop Greening.....	l.	b.	F. M.	A.	-
83	Winter White	l.	v. g.	M.	W.	?
84	Yellow Bellflower.	m.	b.	D. M.	W.	h. r.
85	Yellow Newtown Pippin.....	m.	b.	D.	W.	-

APPLES—*Concluded.*

Number.	Central Division.	Southern Division.	REMARKS.
80	?	?	
81	h. r.	h. r.	Succeeds well in portions of Northern Division.
82	r.	r.	One of our best native varieties. Desirable in many respects.
83	†	†	An old variety introduced by Mr. Vaughn. Grown to some extent in Kennebec, where some speak highly of it. It is not recommended over some newer varieties.
84	r.	r.	Hardy, giving good satisfaction in many localities. On favorable soils an abundant bearer, when it is crisp, juicy and rich.
85	?	?	When not well grown, quality as inferior as its size. Not extensively grown. In some instances proving well.

III—PEARS.

The columns explain as follows: "Size"—s., small; m., medium; l., large. "Form"—d., pyriform; ob. p., obtuse pyriform; ob. o. p., oblong obtuse pyriform; r., roundish; r. ob., roundish obtuse. "Color"—y. g., yellowish green; y. g. r., yellowish green with red cheek; y. r., yellow russet; y., yellow. "Quality"—g., good; v. g., very good; b., best. "Use"—F., family; F. M., family and market; M., market; K., kitchen. "Season"—S., summer; A., autumn; E. A., early autumn; L. A., late autumn; W., winter. The letter q affixed to the name of a variety indicates that it is adapted to be grown on the quince stock.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bartlett.....	l.	ob. o. p.	y.	v. g.	F. M.	E. A.
2	Belle Lucrative, q.....	m.	r. o. p.	y. g.	b.	F.	E. A.
3	Beurre Bosq.....	l.	p.	y. r.	b.	F. M.	L. A.
4	Beurre Clairgeau.....	l.	p.	y. r.	g.	M.	L. A.
5	Beurre d'Anjou, q.....	l.	ob. p.	y. g. r.	b.	F. M.	L. A.
6	Beurre Diel, q.....	l.	r. ob. p.	y. r.	v. g.	F. M.	L. A.
7	Beurre Giffard, q.....	m.	p.	y. g.	v. g.	F. M.	S.
8	Beurre Superfin, q.....	m.	r. p.	y. r.	v. g.	F.	A.
9	Beurre Hardy, q.....	l.	ob. p.	y. g.	g.	F. M.	A.
10	Clapp's Favorite, q.....	l.	ob. o. p.	y. g. r.	v. g.	F. M.	E. A.
11	Dearborn's Seedling.....	s.	r. p.	y.	v. g.	F. M.	E. A.
12	Doyenne d'Ete.....	s.	r. o. p.	y. g. r.	v. g.	F.	S.
13	Duchess d'Angouleme, q..	l.	ob. o. p.	y.	v. g.	F. M.	L. A.
14	Eastern Belle.....	m.	r. o. p.	y.	b.	F.	A.
15	Fulton.....	s.	r. ob.	y. r.	b.	F. M.	A.
16	Glout Morceau, q.....	l.	ob. p.	y.	g.	-	L. A.
17	Goodale.....	l.	ob. o. p.	y. g.	v. g.	F. M.	A.
18	Howell, q.....	l.	r. p.	y. g.	v. g.	F. M.	A.
19	Lawrence.....	m.	r. o. p.	y. g. r.	v. g.	F.	W.
20	Louise Bonne de Jersey, q	l.	ob. p.	y. g.	v. g.	F. M.	A.
21	Manning's Elizabeth.....	s.	ob. p.	y. r.	v. g.	F.	S.
22	Rostiezer.....	s.	p.	y. g. r.	b.	F.	E. A.
23	Sheldon.....	m.	r.	y. r.	v. g.	F. M.	A.
24	Urbaniste, q.....	m.	p.	y. g.	v. g.	F. M.	L. A.
25	Vicar of Winkfield, q....	l.	p.	y. g.	g.	K. M.	W.
26	Winter Nelis.....	s.	ob. p.	y. r.	b.	F.	W.

REMARKS ON THE LIST OF PEARS.

Nos. 10, 11, 14, 15, 17, 18, 19 and 23, are of American origin; the others foreign. Nos. 14, 15 and 17 are native of Maine.

No. 1—*Bartlett*. Tree somewhat tender, and hence liable to injury from sudden changes of temperature in winter.

No. 2—*Belle Lucrative*. One of the best at its season as a single variety for home use.

No. 3—*Beurre Bosq*. Tree vigorous and a regular bearer. Fruit generally perfect and of uniform size and high color.

No. 4—*Beurre Clairgeau*. Succeeds best on light, warm soils. Forms a fine, thrifty tree, and bears early. Valuable for market.

No. 5—*Beurre d'Anjou*. In some localities bears lightly,—otherwise nearly faultless, both in tree and fruit.

No. 6—*Beurre Diel*. First rate in every respect in favorable

situations; but on young trees and in cold soils the fruit is apt to be coarse and astringent.

No. 7—*Beurre Giffard*. Tree of moderate growth, spreading, slender. Like all early pears, this should be gathered before fully ripe, otherwise it is liable to lack quality and decay at the core.

No. 8—*Beurre Superfin*. Trees very healthy—inclined to be thorny. Not an early bearer.

No. 9—*Beurre Hardy*. Trees remarkably vigorous.

No. 10—*Clapp's Favorite*. Fruit showy and attractive. Tree a vigorous grower. Very popular.

No. 11—*Dearborn's Seedling*. Regular and abundant bearer. Fruit sweet and sprightly in flavor.

No. 12—*Doyenne d' Ete*. Must be gathered before fully ripe.

No. 13—*Duchess d' Angouleme*. Gives its best fruit on quince stock, with garden culture.

No. 14—*Eastern Belle*. For full description see page 123.

No. 15—*Fulton*. Should be grafted into vigorous trees.

No. 16—*Glout Morceau*. Tree of spreading habit. Unreliable in heavy soils.

No. 17—*Goodale*. Very vigorous and productive; fruit having a short stem, is liable to blow off.

No. 18—*Howell*. Tree hardy, and an upright and free grower.

No. 19—*Lawrence*. Succeeds in more sandy soils than most pears.

No. 20—*Louise Bonne de Jersey*. As No. 13.

No. 21—*Manning's Elizabeth*. A beautiful dessert fruit; desirable for amateurs; very productive; growth moderate.

No. 22—*Rostiezer*. Tree vigorous, but of irregular and straggly growth.

No. 23—*Sheldon*. Tree vigorous, hardy and a good bearer.

No. 24—*Urbaniste*. Of slow growth on quince, but when grown is one of the best in quality, and most permanent and productive.

No. 25—*Vicar of Winkfield*. The best cooking pear. When of large size, by suitable thinning, and ripened yellow, is good for eating.

No. 26—*Winter Nelis*. Should be grafted into vigorous trees.

III—QUINCES.

Angers. Fruit very large, oblate pyriform, yellowish, tender. This variety is grown and known chiefly as a stock for dwarf pears.

Apple or Orange. Fruit large, roundish, yellowish green, half tender. Valuable for home use or in market, for preserves, &c.

IV—PLUMS.

ABBREVIATIONS: "Size"—l, large; m., medium; s., small. "Form"—r., roundish; o., oval; r. o., roundish oval; o. ob., oval obovate. "Color"—p., purplish or very dark; r., reddish or copper color; y., yellow; g. y., greenish yellow; y. r., yellowish with shades or spots of red. "Quality"—g., good; v. g., very good; b., best. "Use"—F., family; M., market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bavay's Green Gage..... <i>Reine Claude de Bavay</i>	l.	r.	g. y.	b.	F.	L.
2	Bleeker's Gage.....	m.	r. o.	y.	v. g.	F. M.	M.
3	Bradshaw.....	l.	o. ob.	r. p.	g.	M.	M.
4	Coe's Golden Drop.....	l.	o.	y. r.	v. g.	F. M.	L.
5	Coe's Late Red.....	m.	r.	p.	v. g.	F. M.	L.
6	Columbia.....	l.	r.	p.	g.	M.	M.
7	Damson.....	s.	o.	p.	g.	M.	L.
8	Duane's Purple.....	l.	o.	r. p.	g.	F. M.	E.
9	Green Gage.....	s.	r.	g. y.	b.	F.	M.
10	Huling's Superb.....	l.	r. o.	g. y.	g.	F. M.	M.
11	Imperial Gage.....	l.	o.	g. y.	b.	F. M.	M.
12	Jefferson.....	l.	o.	y. r.	b.	F. M.	M.
13	Lombard.....	m.	r. o.	r. p.	g.	M.	M.
14	McLaughlin.....	l.	r.	y. r.	b.	F. M.	M.
15	Purple Gage.....	m.	r.	p.	v. g.	F. M.	M.
16	Smith's Orleans.....	l.	o.	r. p.	v. g.	F. M.	M.
17	Washington.....	l.	r. o.	g. y.	v. g.	F. M.	E.
18	Yellow Egg..... <i>White Magnum Bonum</i>	l.	o.	y.	g.	F. M.	M.

V—CHERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—ob. h., obtuse heart shape; r. ob. h., roundish obtuse heart shape; r. h., roundish heart shape; r., roundish or round. "Color"—l. r., lively bright red; d. r., red, almost black; a. m., amber mottled with red; y. r. yellow ground shaded with red. "Class"—H., Hearts, or tender fleshed sweet cherries; B., Bigarreau, or firm fleshed; D., Dukes, having a character in tree and fruit midway between the Hearts and Morellos; M., Morellos, having acid fruit, and the trees of small, slender growth. "Use"—F., family, for dessert; F. M., family or market; K. M., cooking or market; M., market. "Season"—E., early; M., medium; L., late. For general descriptions see pages 78-81.

Number.	NAMES.	Size.	Form.	Color.	Class.	Use.	Season.
1	Belle de Choisy.....	m.	r.	a. m.	D.	F.	E. M.
2	Belle Magnifique.....	l.	r. h.	l. r.	D.	K. M.	L.
3	Black Heart.....	l.	r. h.	d. r.	H.	F. M.	M.
4	Black Tartarian.....	l.	r. h.	d. r.	H.	F. M.	M.
5	Coe's Transparent.....	m.	r.	a. m.	H.	F.	M.
6	Early Purple Guigne.....	m.	r. h.	d. r.	H.	F. M.	E.
7	Early Richmond.....	s.	r.	l. r.	M.	K. M.	E.
8	Elton.....	l.	r. h.	y. r.	B.	F. M.	M.
9	Governor Wood.....	l.	r. h.	y. r.	H.	F. M.	M.
10	Late Duke.....	l.	ob. h.	d. r.	D.	K. M.	L.
11	Louis Philippo.....	l.	r.	d. r.	D.	K. M.	L.
12	May Duke.....	l.	r. ob. h.	d. r.	D.	K. M.	E.
13	Morello.....	l.	r. h.	d. r.	M.	K. M.	L.
14	Napoleon.....	l.	r. ob. h.	y. r.	B.	F. M.	M.
15	Reine Hortense.....	l.	r.	l. r.	D.	F. M.	L.

VI—NATIVE GRAPES.

ABBREVIATIONS: "Size"—with reference to the berry, l. large; m. medium; s., small. "Form"—with reference to bunch and berry, s. r., short bunch, round berry; l. r., large and round; m. r. o., medium bunch, roundish oval berry; m. r., medium bunch, round berry. "Color" (when fully ripe)—b., black, or nearly so; r. reddish; g. greenish white or yellowish. "Quality"—p., poor; g., good; v. g., very good; b. best. "Use"—T., table; M., market; W., wine.

Number	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Allen's Hybrid.....	l.	l. r.	g.	v. g.	T. M.	M.
2	Adirondac.....	m.	m. r.	b.	v. g.	T.	E.
3	Agawam.....	l.	s. r. o.	r.	v. g.	-	M.
	<i>Rogers' No. 15.</i>						
4	Black Hawk.....	m.	m. r.	b.	v. g.	-	M.
5	Clinton.....	s.	m. r.	b.	p.	T. W.	L.
6	Concord.....	l.	l. r.	b.	g.	T. M. W.	M.
7	Creveling.....	m.	m. r. o.	b.	v. g.	T.	E.
8	Delaware.....	s.	s. r.	r.	b.	T. M. W.	E.
9	Diana.....	m.	s. r. o.	r.	v. g.	T. M.	L.
10	Eumelan.....	m.	r.	b.	g.	T.	M.
11	Hartford Prolific.....	l.	m. r. o.	b.	g.	M.	E.
12	Iona.....	m.	m. r. o.	r.	b.	T. M. W.	L.
13	Isabella.....	l.	m. r. o.	b.	g.	T. M.	L.
14	Israella.....	m.	s. r. o.	b.	p.	T.	M.
15	Lindley.....	m.	m. r. o.	r.	v. g.	T.	M.
	<i>Rogers' No. 9.</i>						
16	Merrimack.....	l.	s. r.	b.	v. g.	M.	M.
	<i>Rogers' No. 19.</i>						
17	Miles.....	s.	m. r.	b.	g.	T.	E.
18	Rebecca.....	m.	s. r.	g.	v. g.	T.	M.
19	Salem.....	l.	r.	p.	g.	M.	M.
	<i>Rogers' No. 22.</i>						
20	Telegraph.....	l.	m. r. o.	b.	v. g.	T. M.	E.
	<i>Christine.</i>						
21	Wilder.....	l.	l. r.	b.	v. g.	T. M.	M.
	<i>Rogers' No. 4.</i>						

REMARKS ON THE LIST OF GRAPES.

No. 1—*Allen's Hybrid*. A luxuriant grower and abundant bearer, and when well ripened one of the most delicious varieties of the Sweetwater class; but rather too late to be recommended for general culture in this State.

No. 2—*Adirondac*. A feeble grower while young. Fruit free from pulp, and of fine flavor. Needs further trial. Not uniformly reliable thus far.

No. 3—*Agawam*. Very handsome, and a good keeping variety. Flavor rich, spicy and good.

No. 4—*Black Hawk*. A seedling of the Concord. Vine hardy and vigorous. Bunches compact, shouldered. Fruit juicy and sweet.

No. 5—*Clinton*. Fruit small, late and harsh. Valuable only for wine. Vine hardy. Not recommended.

No. 6—*Concord*. A free grower, and bears heavily, but does not generally mature its fruit in this State.

No. 7—*Creveling*. Of excellent quality, not rich, but entirely free from foxiness. Mildews badly in some localities.

No. 8—*Delaware*. Bunch and berry small, and not a good keeper, but in all other respects one of the most desirable varieties for general cultivation. Vine healthy and hardy, and an early and constant bearer. Requires rich soil and high culture.

No. 9—*Diana*. Rather late for Maine, but of fine quality, and the best keeping variety.

No. 10—*Eumelan*. Has not given satisfaction in this State.

No. 11—*Hartford Prolific*. Early, hardy, vigorous and productive, but fruit ripens unevenly and drops from the bunch.

No. 12—*Iona*. Of high flavor and a good keeper, but too late for general cultivation in Maine. Requires rich, warm soil. Vine and foliage healthy.

No. 13—*Isabella*. An old, standard variety. Largely superseded by earlier and better sorts. A free grower, and hardy.

No. 14—*Israella*. A thick skinned variety and a good keeper. Not desirable, being of inferior quality.

No. 15—*Lindley*. One of the earliest and best of Rogers' hybrids. Bunch and berry handsome. Of good quality and excellent keeper.

No. 16—*Merrimack*. Ripens uniformly and well, and gives general satisfaction. Vigorous and productive.

No. 17—*Miles*. Very early. Fruit too small for market.

No. 18—*Rebecca*. Of fine flavor and keeps well. Of slender growth and tender when young, but a healthy grower when established.

No. 19—*Salem*. Not as reliable in this State as the other well known varieties of the same class. Foliage liable to mildew. Flavor rich, aromatic and sweet. Needs further trial.

No. 20—*Telegraph*. Not much known in this State, but highly recommended elsewhere for earliness and general good qualities.

No. 21—*Wilder*. Vigorous. Foliage strong and healthy. Requires a strong, rich soil. A reliable and valuable variety but a little later than some others of its class.

VII—FOREIGN GRAPES.

The catalogue of the American Pomological Society contains thirty-three varieties of foreign grapes, nearly all of which, with many others, are grown in this State; and being cultivated exclusively under glass they are exempt from the variations induced by climate and soil, and therefore equally adapted to all localities. The description embraces color, flavor, season, and the character of the vinery—whether hot or cold—in which they may be grown. It is not perceived that the insertion of such a list will be of material service to cultivators of this class of grapes, the information which it would contain being within their reach in other forms; hence it is omitted.

VIII—BLACKBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—ob. c., oblong conic; ov., oval; cb. ov., oblong oval. "Quality"—v. g., very good; b., best. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Quality.	Season.
1	Dorchester.....	m.	ob. c.	b.	M.
2	Kittatinny.....	l.	ov.	b.	M.
3	Wilson's Early.....	l.	ob. ov.	v. g.	E.

IX—C U R R A N T S.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form of bunch"—m., medium; s., short. "Color"—r., red; b., black; w., white. "Quality"—a., acid; m. a., moderately acid; v. a., very acid. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form of bunch.	Color.	Quality.	Season.
1	Black Naples.....	l.	s.	b.	m. a.	M.
2	Black Grape. <i>Ogden's Black</i>	l.	m.	b.	m. a.	M.
3	Cherry.....	l.	s.	r.	v. a.	M.
4	Imperial Red.....	l.	s.	r.	a.	M.
5	La Versailles.....	l.	s.	r.	a.	M.
6	White Grape.....	m.	m.	w.	m. a.	E.

2 Resembles Black Naples, but more vigorous and productive; fruit larger and of better quality. 3 Shy bearer, and very sour. 4 Generally supposed to be identical with No. 5, but inserted by vote of the Society (p 103) for further investigation. 6 The best white currant.

X—GOOSEBERRIES

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—o., oval; r o., roundish oval "Color"—r., reddish; g., greenish yellow. "Quality"—g., good; v.g., very good. "Season"—E., early; M., medium; L., late

No.	NAMES.	Size.	Form.	Color.	Quality.	Season.
1	Downing.....	m.	r. o.	g.	v. g.	M. L.
2	Houghton.....	s	r. o.	r.	g.	E.
3	Smith's Improved.....	l.	o.	g.	v. g.	M.

1 Of upright habit, productive, desirable. 2 Drooping, vigorous. 3 New; promises well.

XI—RASPBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—r., roundish; c., conical; ob. c., obtuse conical. "Color"—r., reddish; p., purplish; y., yellow; b., black. "Quality"—g., good; v. g., very good; b., best. "Use"—M., market; F. M., family and market "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality	Use.	Season.
1	Clarke.....	m.	r.	r.	v. g.	F. M.	E.
2	Knevett's Giant.....	l.	ob. c.	r.	b.	F.	M.
3	Orange. <i>Brinckle's Orange</i>	l.	c.	y.	b.	F.	M.
4	Philadelphia.....	m.	r.	p.	g.	M.	M.
CAP VARIETIES.							
5	Davison's Thornless.....	m.	r.	b.	g.	F. M.	E.
6	Golden Thornless.....	m.	r.	y.	g.	F.	M.
7	McCormick.....	m	ob c.	b.	v. g.	F. M.	L.
<i>Mammoth Cluster</i>							

1 Canes strong, vigorous and upright; more nearly hardy than any foreign kind; fruit rather soft, juicy, sweet and excellent; better for light soils than any other variety of its class 2 Strong grower and very productive. 3 Fruit tender; valuable for family use. 4 Very productive. 7 Profitable for market.

XII—STRAWBERRIES.

ABBREVIATIONS: "Size"—l., large. "Form"—o. c., obtuse conical; r. c., roundish conical; r. o. c., roundish, obtuse conical. "Color"—b. s., bright scarlet; l. c., light crimson; d. c., deep crimson. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality.	Season.
1	Col. Cheney.....	m. to l.	r. c.	l. c.	v. g.	M. to L.
2	Hovey's Seedling.....	l.	r.	b. s.	v. g.	M.
3	Nicanor.....	m.	r. o. o.	b. s.	v. g.	E. to L.
4	President Wilder.....	l.	r. o. c.	b. s.	v. g.	M.
5	Triomphe de Gand.....	l.	o. c.	l. c.	g.	M.
6	Wilson's Albany.....	l.	r. c.	d. c.	g.	E. to L.

1 A promising new kind. Pistillate. 2 An old and highly valued sort. Pistillate. 3 New. Plants vigorous, moderately productive. Flesh firm, sweet and juicy. Fine for canning. 4 One of the best, of recent introduction. 5 Uneven in size. 6 Hardy and productive; of fair quality when fully ripe.

APPENDIX.

Treasurer's Report for the year 1875.

CHARLES S. POPE, *Treasurer, in account with the Maine State Pomological Society.*

Dr.

To cash in the treasury, January 1, 1875.....	\$111 95	
amount received from the State, bounty for 1874.....	500 00	
entry fees and unclaimed premiums of 1874	6 00	
amount received of life members.....	240 00	
“ “ annual members.....	58 00	
“ “ State Agricultural Society.....	850 00	
“ “ James Vick, for special premiums.....	35 00	
“ “ Portland Horticultural Society (by payment of premiums of 1874).....	235 40	
“ “ on temporary loans.....	290 00	
“ “ for interest on permanent fund.....	2 70	
“ of donated and forfeited premiums of 1875.....	15 00	
		<u>\$2,344 05</u>

Cr.

By paid premiums of 1874	\$652 00	
“ “ 1875	906 00	
“ orders of Executive Committee, 1874.....	79 58	
“ “ “ “ 1875.....	264 23	
“ permanent fund (deposited).....	420 00	
“ interest on loans.....	9 14	
By cash in treasury, December 31, 1875	13 10	
		<u>\$2,344 05</u>

CHARLES S. POPE, *Treasurer.*

Report of the Executive Committee for the year 1875.

To the Members of the Maine State Pomological Society :

The Executive Committee hereby report that they have examined the account of the Treasurer for the year ending December 31, 1875, and have found the same to be correctly stated and properly vouched.

They have drawn orders on the Treasurer during the year as follows:

For incidental expenses of Winter Meeting, 1875.....	\$18 75
Expenses of officers, 1874.....	54 92
“ “ 1875	105 85
Postage, telegraph and express bills.....	48 39
Printing annual reports for 1873.....	105 73
“ “ “ 1874.....	131 48

For other printing, stationery and record books.....	\$52 10
Part payment of expenses of delegate to meeting of American Pomological Society at Chicago.....	50 00
Bills for stands and phials for exhibition of cut flowers.....	85 04
Payment of premiums at annual exhibition, 1875.....	906 00
	<hr/> \$1,558 26

The financial condition of the Society on the 31st day of December, 1875, was as follows :

ASSETS.

Cash in the treasury.....	\$13 10
Amount due from the State for 1875.....	500 00
Amount due from Portland Horticultural Society, on account of expenses of exhibition.....	21 17
Accrued interest on permanent fund.....	2 70
	<hr/>
<i>Amount available as resources.....</i>	<i>\$536 97</i>
Permanent fund, deposited in Wiscasset Savings Bank.....	420 00
Property owned by the Society, estimated.....	100 00
	<hr/>
<i>Total assets.....</i>	<i>\$1,056 97</i>

LIABILITIES.

Amount due on temporary loans..	\$290 00
“ of orders drawn and unpaid	334 95
“ of bills for which orders have not been drawn, estimated..	10 00
	<hr/>
	634 95

Balance, being excess of total assets above liabilities..... \$422 02

[Excess of liabilities over available resources, \$97.98.]

By order of the Executive Committee.

GEO. B. SAWYER, *Secretary*.

Lewiston, February 22, 1876.

Members of the Society.

Including all names registered up to March 7, 1876.

NOTE.—Changes of residence or errors should be promptly reported to the Secretary.

LIFE MEMBERS.

Atwood, Fred.....	Winterport	DeRocher, Peter.....	Waterville
Atherton, W. P.....	Hallowell	Dirwanger, Joseph A.....	Portland
Atherton, H. N.....	Hallowell	Emerson, Albert.....	Bangor
Atkins, Charles G.....	Bucksport	Farnsworth, B. B.....	Portland
Crosby, William C.....	Bangor	Gilbert, Z. A.....	East Turner
Clark, Eliphalet.....	Portland	Godfrey, John E.....	Bangor
Carter, Otis L.....	Etna	Harlow, S. C.....	Bangor
Chase, Henry M.....	North Yarmouth	*Harris, N. C.....	Auburn
Crafts, Moses.....	Auburn	Hersey, T. C.....	Portland
Dyer, Milton.....	Cape Elizabeth	Ingalls, Henry.....	Wiscasset

* Deceased.

LIFE MEMBERS—CONCLUDED.

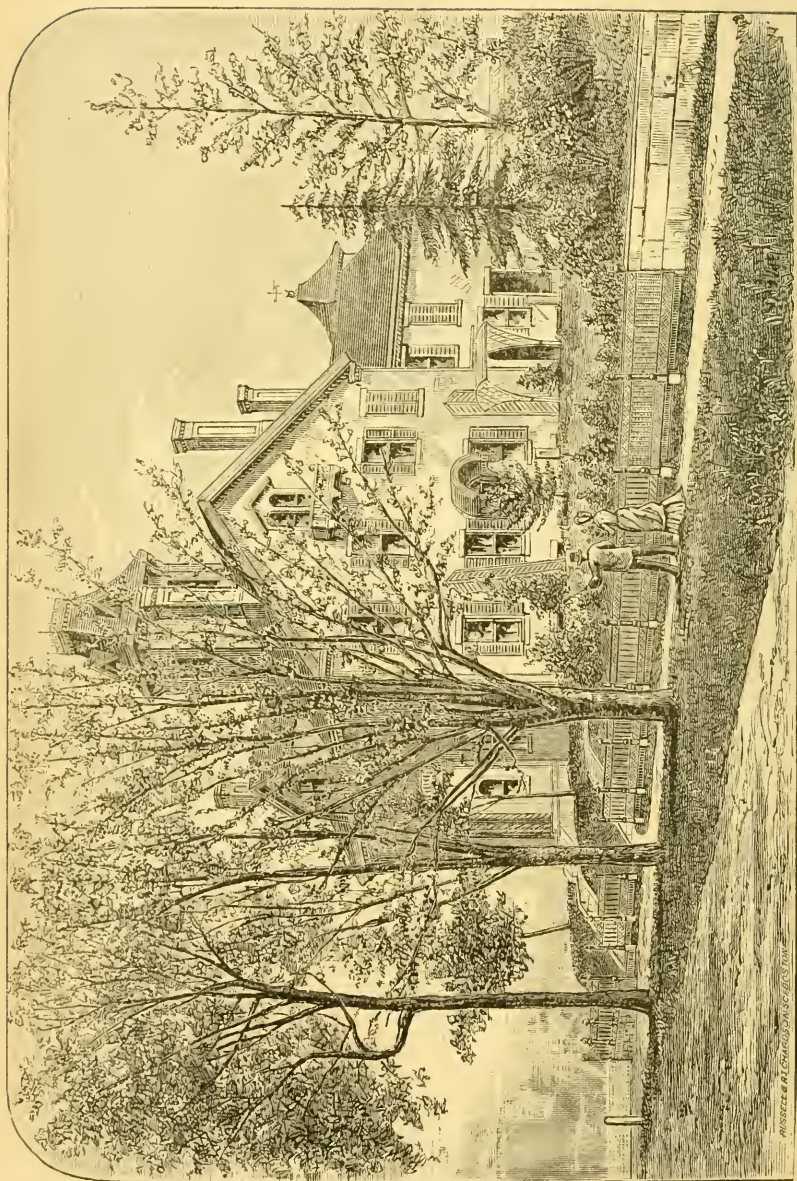
Jewett, George.....	Portland	Sawyer, Andrew S.....	Cape Elizabeth
Low, Elijah.....	Bangor	Smith, Henry S.....	Monmouth
Low, S. S.....	Bangor	Sweetser, S. R.....	Cumberland Centre
McLaughlin, Henry.....	Bangor	Strattard, Mrs. A. B.....	Monroe
Morton, Will E.....	Allen's Corner	Taylor, Joseph.....	Belgrade
Noyes, Albert.....	Bangor	Tilton, William S.....	Chelsea
Pope, Charles S.....	Manchester	Thomas, William W., jr.....	Portland
Rolfe, Samuel.....	Portland	Varney, James A.....	North Vassalboro'
Richardson, J. M.....	Greene	Vickery, James.....	Portland
Sawyer, George B.....	Wiscasset	Woodman, George W.....	Portland
Stetson, Isaiah.....	Bangor	Weston, James C.....	Bangor
Smith, Alfred.....	Monmouth	Wade, Patrick.....	Portland

ANNUAL MEMBERS.

Adams, Loren.....	East Wilton	Farrington, J. R.....	Orono
Abbott, Lyman F.....	Wilton	Farley, E. Wilder.....	Newcastle
Abbott, H. G.....	Vassalboro'	Freeman, William, jr.....	Cherryfield
Belcher, Hannibal.....	Farmington	Field, Jacob A.....	Lewiston
Boardman, Samuel L.....	Augusta	Fernald, Granville.....	Harrison
Bailey, B. C.....	Bath	Gilbert, Washington.....	Bath
Bailey, S. D.....	Bath	Goodale, S. L.....	Saco
Brackett, George E.....	Belfast	Glidden, Oakman F.....	Deering
Blaney, Arnold.....	Bristol	Getchell, Ira E.....	Winslow
Beearce, Chandler.....	Bristol	Gould, Edward.....	Portland
Brightman, Benjamin F.....	Bristol	Guild, Samuel.....	Augusta
Bell, James B.....	Augusta	Gilman, J. E.....	Portland
Badger, William S.....	Augusta	Garland, A. S.....	Carmel
Bradford, Joseph.....	Portland	Hight, B. M.....	Skowhegan
Bradford, A. E.....	Turner	Hobson, Isaac T.....	Wiscasset
Butler, E. K.....	Hallowell	Homar, J. A.....	Augusta
Brown, Philip H.....	Portland	Hoffses, Elmas... Warren (P. O. Waldoboro')	
Batchelder, Joseph.....	Yarmouth	Haskell, Aretas.....	Pittsfield
Berry, Stephen.....	Portland	Hansecom, John.....	Saco
Briggs, D. J.....	Auburn	Hoffses, Joseph J. A.....	East Jefferson
Carrier, John.....	Waldoboro'	Hussey, Moses H.....	North Berwick
Chamberlain, Calvin.....	Foxcroft	Jellerson, C. T.....	Lewiston
Chamberlain, David.....	Bristol	Jordan, Elder M.....	—
Colburn, Horace.....	Windsor	Johnson, J. A.....	Auburn
Clapp, Charles, jr.....	Bath	Lennox, William P.....	Wiscasset
Carpenter, James M.....	Pittston	Libbey, Matthias.....	Portland
Coburn, Edwin.....	Portland	Leland, S. R.....	Farmington
Coe, Henry H.....	Portland	Lakin, C. B.....	Augusta
Cobb, Elbridge L.....	East Deering	Morton, Leander.....	Bristol
Carney, Franklin L.....	Newcastle	Merrill, J. W.....	Portland
Dill, Seward.....	Phillips	Mower, J. C.....	Greene
Dunnells, Z.....	Newfield	Marshall, Isaac N.....	New Bedford, Mass
Duffey, Patrick.....	Portland	Mattocks, C. P.....	Augusta
Emerson, John.....	Howland	North, James W., jr.....	Augusta
Fuller, A. J.....	Bath	O'Brien, E. C.....	Deering

ANNUAL MEMBERS—CONCLUDED.

Perley, S. F.	Naples	Sherburne, C. S.	Prospect Ferry
Percival, Warren.	Vassalboro'	Stanley, Charles.	Winthrop
Pope, Jacob	Manchester	Sprague, H. A.	Charlotte
Pike, N. R.	Winthrop	Sweetser, A. S.	Cumberland Centre
Preble, George A.	Bath	Sparrow, Frank W.	Deering
Patten, John.	Bath	Sampson, Charles.	New Gloucester
Perkins, L. J.	Deering	Starrett, L. F.	Warren
Parker, B. F. ...	Jay (P. O. Livermore Falls)	Taber, Henry.	Vassalboro'
Reed, Edwin	Bath	Tilley, Henry	Castle Hill
Riggs, John A.	North Georgetown	Taylor, William A.	Portland
Rand, Sumner C.	Portland	Weston, George O.	Madison
Robbins, C. S.	Winthrop	Wakefield, J. W.	Bath
Richardson, M. W.	Stevens' Plains	Woodward, F. M.	Winthrop
Rolfe, William T.	Portland	Wilson, Minot M.	Bowdoinham
Simpson, A. L.	Bangor	Woodman, Alfred.	Portland
Spaulding, Calvin.	Hallowell	Whitney, Edward K.	Harrison
Spaulding, Benjamin.	Augusta	Young, Edmund J.	Acton (P. O. Horn's Mills, N. H.)
Simmons, H. J. A.	Waldoboro'		
Small, William H.	Wiscasset		

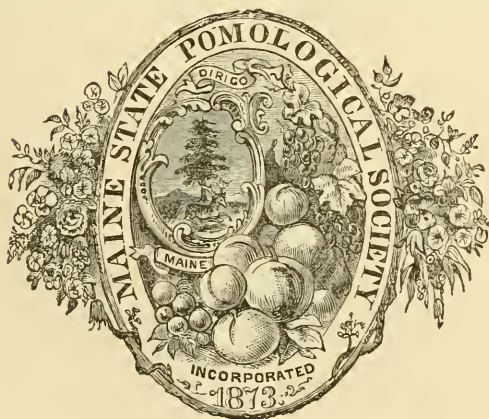


RUSSELL & RICHMOND, N.Y.

RESIDENCE AND GROUNDS OF THE LATE DR. J. C. WESTON, BANGOR.

FOURTH ANNUAL REPORT
OF THE
SECRETARY
OF THE
MAINE STATE POMOLOGICAL SOCIETY,
FOR THE YEAR
1876;

INCLUDING THE TRANSACTIONS OF THE WINTER MEETING, HELD AT MONMOUTH,
JANUARY 23d AND 24th, 1877.



AUGUSTA:
PRESS OF SPRAGUE, OWEN & NASH.
1877.

— “But we see, too, that the nobler races, or truly cultivated men even now raise their warning voices, put their small hand to the mighty work of restoring to Nature her strength and fullness, yet in a higher stage than that of *wild* Nature; rather dependent on the law of purpose given by Man, arranged according to plans which are copied from the development of manhood itself. All this indeed remains at present but a powerless, and for the whole, an insignificantly small enterprise, but it preserves the faith in the vocation of Man and his power to fulfil it. In future times he will and must, when he rules, leads and protects the whole, free Nature from the tyrannous slavery to which he now abases her, and in which he can only keep her by restless giant-struggles against the eternally Resisting. We see in the gray, cloudy distance of the Future, a realm of Peace and Beauty on the Earth and in Nature, but to reach it must Man long study in the School of Nature, and, *before all*, free himself from the bonds of Egotism.”—*Schleiden*.

INTRODUCTORY.

To the members of the State Pomological Society, and those persons who have been attentive readers of its published Transactions, this volume needs no introduction. But for the information of other readers, it is proper to say that the Society is not to be held responsible for the correctness of statements, either of fact or opinion, in the papers and discussions presented; but undertakes simply to report them, or the substance of them, correctly. The same remark applies, so far as matters of opinion and generalization are concerned, to the portion constituting strictly the report of the Secretary.

The proceedings of the Winter Meeting, comprising the larger part of the contents of this volume, were reported by Messrs. L. F. Starrett and W. G. Moore, the accomplished stenographers of the Society, and revised by myself; and it is confidently believed that nothing of material importance has been omitted.

To all persons concerned in the production or presentation of this report, I would express my obligations for their uniform courtesy and prompt co-operation.

G. B. SAWYER, *Secretary*.

WISCASSET, June, 1877.

ERRATA.

On page 63, in the description of the Winthrop Greening, for "where" read "when."

Page 64. For "*Canada Red*" read "*Red Canada*."

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MAINE STATE POMOLOGICAL SOCIETY.

Officers for the Year 1877.

PRESIDENT,

Z. A. GILBERT, EAST TURNER.

VICE PRESIDENTS,

ANDREW S. SAWYER, CAPE ELIZABETH.

JOSEPH TAYLOR, BELGRADE.

SECRETARY,

GEORGE B. SAWYER, WISCASSET.

CORRESPONDING SECRETARY,

* DR. J. C. WESTON, BANGOR.

TREASURER,

CHARLES S. POPE, MANCHESTER.

EXECUTIVE COMMITTEE,

The President and Secretary, *ex officio*; SAMUEL ROLFE, Portland; JAMES A. VARNEY, North Vassalboro'; HENRY McLAUGHLIN, Bangor.

TRUSTEES,

Rufus Prince, Turner, Androscoggin county; Henry Tilley, Castle Hill, Aroostook county; S. F. Perley, Naples, Cumberland county; Hannibal Belcher, Farmington, Franklin county; C. G. Atkins, Bucksport, Hancock county; Joseph Taylor, Belgrade, Kennebec county; Elmas Hoffses, Warren, Knox county, (P. O. Waldoboro'); H. J. A. Simmons, Waldoboro', Lincoln county; Dr. A. L. Hersey, Oxford, Oxford county; *Albert Noyes, Bangor, Penobscot county; Calvin Chamberlain, Foxcroft, Piscataquis county; Washington Gilbert, Bath, Sagadahoc county; George O. Weston, Madison, Somerset county; J. W. Lang, Brooks, Waldo county; William Freeman, Jr., Cherryfield, Washington county; S. L. Goodale, Saco, York county.

* Deceased.

Maine State Pomological Society.

TRANSACTIONS FOR 1876.

The report herewith presented embraces the Transactions of the Maine State Pomological Society,—so far as their publication is deemed to be of interest to the members of the Society or the public at large, or to be required by law or usage,—during the year 1876; closing with the Winter Meeting held (by adjournment) January 23d and 24th, 1877.

The primary object of our organization is “the promotion of fruit culture,” as an interest important to individuals and to the State; and among the various subjects connected with and tending to this object, which have received more or less attention during the past year, the experience and investigations of the Society have shown that no other is of such paramount and present importance as *high and thorough cultivation*. Accordingly the attention of the Society has been largely directed to this point.

It has also been found that many inferior or unprofitable varieties of fruit are grown in the State; and constant efforts have been made to diminish them,—by the frequent and full discussion of varieties, by discouraging their presentation at our exhibitions and by marking them with disapprobation in our fruit lists,—and to encourage the substitution of better varieties in their stead.

The Society has as yet been able to give but little attention to the production of new varieties, nor has it made any systematic efforts to introduce and test new varieties from abroad. These subjects will, undoubtedly, as they should, receive a due share of attention in the future.

It is a well established fact that we have, in the larger portion of the State, the requisite conditions of soil and climate for the production of apples of high quality and of the finest texture; of

such size, attractive coloring and unrivalled keeping qualities as to command attention in any market; and in endless varieties;— of pears, plums and grapes sufficient in variety and quality for all our wants, and of the small fruits in the greatest profusion and excellence.

We have varieties of fruits more than sufficient in number and intrinsically good enough in quality, for our present purposes. Our most urgent need is not the production of native seedling fruits or the introduction of new varieties from abroad, but the *thorough, high cultivation* of what we have; with a judicious selection of the best varieties for that purpose.

With an increased knowledge of the actual condition of the business of fruit-growing in the State, the importance of these two points has become each year more fully apparent than before, and hence they have occupied a large share of the time at all of our meetings. The exhibitions have also exerted a powerful influence in the same direction because attention to these fundamental conditions is essential to successful competition.

MEMBERSHIP.

By reference to the list of members hereto appended, it will be seen that the membership of the Society has changed somewhat since the last report, chiefly by the falling off of a considerable number of the earlier "annual members," who have not seen fit to continue their contributions, and the accession of others in their stead. This change is always to be expected, as there are among those who become members (more especially at the annual exhibitions) some who have no permanent interest in the work of the Society. The by-laws provide that the names of such persons shall be retained on the lists as members for two years after their annual payments have ceased. This provision was thought to be wise on the ground that it would prevent the summary dismissal of many who through forgetfulness, temporary absence or inability might neglect the payment of dues for a single year, and yet might wish to retain a continuous membership. But it is found in practice that it does not tend to encourage prompt payment, that it increases the incidental expenses of the Society, produces to that extent an essentially fictitious membership and brings but little money into the treasury. It might be well for the Society to consider the propriety of so amending the by-laws as to drop the names of non-paying members at the end of one year.

The Society must depend chiefly for its continued support and efficiency upon the life members. This class of memberships is better both for the Society and the individual, by reason of the comparatively small payment required (\$10.00), the additional benefits mutually secured and the permanent investment of the proceeds.

There was no increase in the number of life members, and consequently none in the amount of the permanent fund, during the year ending December 31st. The list being made up at a later date embraces the names of several who became such at the Winter Meeting and whose payments will appear in the Treasurer's accounts for 1877.

I am happy to report that so far as I am informed no member of the Society has deceased during the year.

The Society most urgently needs a large accession to its membership, and that it should embrace every section of the State. This will be apparent when it is remembered that its plans embrace, among other things, the collection of statistics, the gathering and diffusion of general information, the making of careful and extended experiments and observations, and the active work of the meetings and exhibitions.

There are enough persons in the State directly interested in the objects which the Society aims to promote, to place it, by their assistance and coöperation, on a level, financially and in its developing and educational power, with the flourishing horticultural societies of the other States of the Union. And there is a still larger class interested generally in the welfare of the State, in the development of its resources and the increase of its productions and in making its citizens prosperous and contented at home, to whom we may with propriety appeal for material aid. We seek to build up and encourage the arts of horticulture and rural adornment,—promoting prosperity, health, education and happiness, as the conditions of good citizenship and high civilization. We do not expect that any person by joining our Society will become suddenly rich or successful, but that all will be benefitted and the State enriched.

It is gratifying to report that the Society is making constant but very gradual additions to its working force from among the more intelligent horticulturists of the State, and receiving much encouragement and assistance from prominent individuals of the same class abroad.

The operations of the Society during the past year, aside from the Annual Exhibition and Winter Meeting which will be more fully detailed in subsequent pages of this report, may be stated in a few words. The officers have, as heretofore, rendered their services without compensation, and have transacted the most of the business devolving on them by means of correspondence, necessarily frequent and voluminous, in preference to entailing upon the Society the expense of frequent meetings. In fact but one meeting of the Executive Committee was held during the year otherwise than in connection with the general meetings of the Society.

The library has not been increased except by the addition of public and official documents and the reports of other societies received in exchange for our own, a list of which will be found in the report of the Corresponding Secretary.

There has been during the year frequent and extensive correspondence between the members, and they have contributed to the newspapers a large number of valuable articles on horticultural subjects. The public Press of the State is entitled to much credit for the large amount of horticultural matter of a high order, both original and selected, which it has of late given to the public in answer to an increased demand. On every hand there are unmistakable indications that the people of the State are thinking upon the subject, and it is the laudable ambition of this Society to lead in and give the proper direction to the interest which it has been instrumental in awakening.

The results of some of the specific researches and observations of the members and committees of the Society will appear in the detached papers at the end of this report.

THE SEASON OF 1876

was in its climatic conditions generally favorable for fruit-culture in this State. Throughout a considerable portion of the State, embracing parts of Androscoggin, Franklin, Kennebec and Oxford counties, the crop of apples was greatly reduced and in some localities entirely cut off by the ravages of caterpillars. But in sections where this was not the case and where the vitality of the trees had not been impaired by the operation of the same cause in the preceding year it is believed the crop was fully an average one; and the fruit was uniformly well ripened and fair. Those persons who have not witnessed the devastation alluded to can

have no adequate idea of its effects. The insects appeared so suddenly and in such numbers as in most cases to baffle the skill of the cultivators. Many persons however saved their trees by extreme vigilance and neglecting for the time all other employment, but at an expense exceeding the value of a single crop. It is gratifying to note that the most careful observations indicate that this pest will not re-appear in the coming season. It was fortunate that while our own crop of apples was so much reduced by this cause, large quantities were brought in from other States and sold at moderate prices ; but it was a novel sight to see some of our extensive orchardists buying fruit for their own use.

Pears were grown in about the usual quantity and of good quality, but in the immediate vicinity of Portland the crop was reduced by a violent hail storm at the time of blossoming. Grapes of the varieties adapted to the climate were produced in abundance and well ripened. Neither blight or mildew appear to have affected the one or the other of these crops to any considerable extent. The crop of plums was smaller than usual. The small fruits and berries were abundant and received much attention in cultivation.

For more specific information in respect to the season and its fruitage, reference may be had to the local reports embraced in this volume, presented at the Winter Meeting in answer to a circular issued by the President.

THE FOURTH ANNUAL EXHIBITION

of the Society was held at Waterville, on the third, fourth, fifth and sixth days of October, 1876, concurrently with the annual fair of the North Kennebec Agricultural Society. . The two exhibitions were entirely distinct and independent of each other, though arranged by mutual agreement. The North Kennebec Society generously waived its prior claim to the occupancy of the new Town Hall, and its use was afforded by the town to the Pomological Society gratuitously. The citizens of Waterville interested themselves liberally in behalf of the Society and by their exertions contributed largely to the degree of success which attended the exhibition.

In making the arrangements for this exhibition the Executive Committee were aware of the manifold difficulties attendant upon the undertaking,—that it was a year of great political excitement

and general financial depression, that the pendency of the Centennial Exposition would to a large extent engage the attention of the people, and that many of our orchardists were discouraged by the repeated destruction of their crops by caterpillars. But it was deemed important that an exhibition should be held in order that the work of the Society should suffer no relapse; and it was felt that if it should prove to be a failure it would be less detrimental than an entire suspension of operations. In order to guard against possible failure, it was provided in the regulations "that all premiums awarded should be liable to a *pro rata* reduction sufficient to meet any deficiency that might occur in the receipts, to meet said premiums and other expenses." Unfortunately, the continued prevalence of stormy weather during the exhibition reduced the receipts to such a degree that the Executive Committee were compelled, reluctantly, to resort to such reduction in preference to involving the Society in a permanent debt; and accordingly a discount of 25 per cent. on the premiums was ordered, in which the members and other persons entitled to premiums very generally and cheerfully acquiesced.

The amount offered in premiums, subject to the above condition, was \$1,040.00, exclusive of \$40.00 offered and paid in full by James Vick, the celebrated florist and seedsman of Rochester, N. Y., as special premiums for cut flowers. The total amount of premiums awarded was \$697.00. Further financial details of the exhibition may be found in the report of the Executive Committee hereto appended.

The following schedule exhibits the premiums offered, the conditions affixed, the entries, and the premiums awarded.

[NOTE —The names of persons to whom premiums were awarded are given first, under each specification, with the amount awarded, and afterwards the names of other competitors for the same. When the name of a person is *repeated* the place of residence is omitted.]

CLASS 1.—*Apples.*

FIRST DIVISION.

Conditions.—"Entries for all premiums in this division must consist of five specimens of each variety exhibited, and (except Nos. 19 and 20) of at least twenty named varieties. Entries for premium No. 1 must be separate and distinct collections, not embracing any other collection or specimens."

"Collections entered for premiums Nos. 2 to 17, may also be entered for No. 18, but in any such case only one premium will be awarded for one collection."

Premium No. 1. For the best general collection of apples grown exclusively within the limits of either county in this State, but not necessarily grown by the exhibitor.

S. H. Cole, Lewiston, (Androscoggin County,) first premium, \$20; Joseph Taylor, Belgrade, (Kennebec County,) second premium, \$15; George B. Sawyer, Wiscasset, (Lincoln County,) third premium, \$10.00.

2. For the best general collection of apples, grown by the exhibitor, in Androscoggin County. (No entry.)

3. For the same in Aroostook County. (No entry.)

4. For the same in Cumberland County. Milton Dyer, Cape Elizabeth, \$10.

5. For the same in Franklin County. (No entry.)

6. For the same in Hancock County. (No entry.)

7. For the same in Kennebec County. Joseph Taylor, \$10. Adrian Bowman, Waterville; Alfred Smith, Monmouth; Charles S. Pope, Manchester.

8 to 13 inclusive. For the same in Knox, Lincoln, Oxford, Penobscot, Piscataquis and Sagadahoc Counties. (No entries.)

14. For the same in Somerset County. Frank E. Nowell, Fairfield, \$10.

15. For the same in Waldo County. Mrs. A. B. Strattard, Monroe, \$10.

16. For the same in Washington County. (No entry.)

17. For the same in York County. John Hanscom, Saco, \$10.

18. For the best general exhibition of apples. Pulsifer Bro's, Poland, \$20; S. C. Harlow, Bangor, \$15; Alfred Smith, \$10; Adrian Bowman, \$5. Henry Taber, Vassalboro'; Joseph Taylor, Charles S. Pope.

19. For the best five named varieties of fall apples. Charles S. Pope, \$5; Alfred Smith, \$3; Pulsifer Bro's, \$2. Joseph Taylor, Mrs. A. B. Strattard, S. C. Harlow.

20. For the best five named varieties of winter apples. Pulsifer Bro's, \$5; Alfred Smith, \$3; S. C. Harlow, \$2. Joseph Taylor, Mrs. A. B. Strattard, Adrian Bowman, Milton Dyer, Asa F. Severance, Nobleboro'.

SECOND DIVISION.

Entries for premiums in this division were required to consist of ten specimens of each variety exhibited.

21. For the best single variety of autumn apples. Charles S. Pope, \$3; Pulsifer Bro's, \$2. Joseph Taylor, Alfred Smith, S. C. Harlow.

22. For the best single variety of winter apples. Joseph Taylor, \$3; S. C. Harlow, \$2. Alfred Smith, Pulsifer Bro's.

23. For the best dish of American Golden Russets. George B. Sawyer, \$2. Mrs. A. B. Strattard, S. H. Cole, Alfred Smith, Daniel Ayer, Vassalboro'.

24. Baldwins. Charles S. Pope, \$2; Alfred Smith, \$1. Joseph Taylor, Mrs. A. B. Strattard, Geo. B. Sawyer, S. H. Cole, Aretas Haskell, Pittsfield; F. W. Runnells, Clinton; Henry Taber, Geo. H. Andrews, Monmouth; Daniel Ayer, Pulsifer Bro's, Milton Dyer.

25. Black Oxford. S. H. Cole, \$2; George H. Andrews, \$1. Mrs. A. B. Strattard, Henry Taber, Pulsifer Bro's; I. S. Weeks, Vassalboro'.

26. Dean. Joseph Taylor, \$2.

27. Duchess of Oldenburgh. Pulsifer Bro's, \$2; Henry Tilley, Castle Hill, \$1. S. C. Harlow.

28. Fall Harvey. Aretas Haskell, \$2; Russell Eaton, Augusta, \$1. Henry Taber, Alfred Smith.

29. Gravenstein. Pulsifer Bro's, \$2; S. H. Cole, \$1. Joseph Taylor, S. C. Harlow.

30. Hubbardston Nonsuch. Pulsifer Bro's, \$2; Russell Eaton, \$1. Joseph Taylor, Henry Taber, Alfred Smith.

31. Hurlbut. Henry Taber, \$2; Daniel Ayer, \$1.

32. Jewett's Fine Red, (Nodhead.) Joseph Taylor, \$2; Alfred Smith, \$1. A. F. Severance, Aretas Haskell, Henry Taber, Pulsifer Bro's; Stephen Knox, Fairfield Centre.

33. King of Tompkins County. Pulsifer Bro's, \$2; Aretas Haskell, \$1. Joseph Taylor, Mrs. A. B. Strattard, Geo. B. Sawyer, Daniel Ayer.

34. King Sweeting. Alfred Smith, \$2.

35. Minister. (No entry.)

36. Mother. George H. Andrews, \$2; S. H. Cole, \$1.

37. Northern Spy. Joseph Taylor, \$2; Charles S. Pope, \$1. Mrs. A. B. Strattard, S. H. Cole, Russell Eaton, Aretas Haskell, F. W. Runnells, Henry Taber, Alfred Smith, Pulsifer Bro's.

38. Porter. Milton Dyer, \$2; Pulsifer Bro's, \$1. Joseph Taylor, Mrs. A. B. Strattard, Aretas Haskell, Alfred Smith.

39. Pumpkin Sweet. (No entry.)

40. Red Astrachan. S. C. Harlow, \$2. Daniel Ayer.

41. R. I. Greenings. Pulsifer Bro's, \$2; S. H. Cole, \$1. Joseph Taylor, Aretas Haskell, Henry Taber, Alfred Smith.

42. Roxbury Russets. Alfred Smith, \$2; George H. Andrews, \$1. Joseph Taylor, Adrian Bowman, Pulsifer Bro's.

43. Sops of Wine, (Bell's Early.) S. C. Harlow, \$2. Henry Tilley.

44. Somerset. Joseph Taylor, \$2.
45. Starkey. Charles S. Pope, \$2; Daniel Ayer, \$1. Henry Taber.
46. Tallman's Sweet. Pulsifer Bro's, \$2; Daniel Ayer, \$1. Aretas Haskell, Henry Taber, Frank E. Nowell, Alfred Smith.
47. Williams' Favorite. S. C. Harlow, \$2; Joseph Taylor, \$1. S. H. Cole, F. W. Runnells.
48. Winthrop Greenings. S. H. Cole, \$2; Alfred Smith, \$1. Joseph Taylor, Russell Eaton, Henry Taber.
49. Yellow Bellflower. F. W. Runnells, \$2; S. H. Cole, \$1. Joseph Taylor, Mrs. A. B. Strattard, Henry Taber, Frank E. Nowell, Geo. H. Andrews, Alfred Smith, John Hanscom, Pulsifer Bro's.
50. Seedling apples (Not awarded.) S. H. Cole, F. W. Runnells and I. S. Weeks, each exhibited two varieties. Joseph Taylor, Mrs. A. B. Strattard, Columbus Hayford of Maysville, Adrian Bowman, Alfred Smith, J. C. Richardson of Garland, one each.
51. Crab apples. Geo. B. Sawyer, Transcendant, \$1. Joseph Taylor, Henry Tilley, Transcendant, Montreal Beauty and Hyslop; Frank E. Nowell, Alfred Smith, Pulsifer Bro's.
52. Collection of crab apples—not less than five varieties. Geo. B. Sawyer, \$3. Joseph Taylor, Mrs. A. B. Strattard, Alfred Smith, S. C. Harlow.
- Sundries. Nathaniel Oak, Exeter, collection 17 varieties winter apples, gratuity, \$3; F. W. Runnells, Fall Pippin, Autumn Strawberry, Fall Jeneting, Fameuse and a sweet variety, gratuity, \$2; Daniel Ayer, Fall Seek-no-further, Wagener, 20-ounce and Queen Vic, gratuity, \$2; Joseph Taylor, Judy and Flanders apples, gratuity, \$1; S. H. Cole, Spitzenburgh; G. B. Sawyer, Fameuse; Henry Tilley, Beauty of Kent and Fameuse; Geo. H. Andrews, Fairbanks; John Hanscom, Bottle Greenings; S. H. Farnsworth, China, basket of apples.

Dr. H. A. Robinson of Foxcroft, presented very fine specimens of the Rolfe apple, so called, some of which were forwarded by the Secretary to Mr. Charles Downing, and elicited the following reply: "The large red apple, marked Rolfe, is the same as 'Macomber' on page 262 of *Downing's Fruits and Fruit Trees of America*, second revised edition. I have received it under both names. * * * * It has fruited here two seasons and promises to be valuable. I find on referring to my notes that Calvin Chamberlain of Foxcroft, Me., says that it was a seedling planted by Mrs. Betsey Houston of Abbot, Me., on her farm, which was soon after sold to Mr. Rolfe, who presented the apples to Benjamin Macomber, and the latter named it Rolfe. Of course the name is *Rolfe*."

The description above referred to (Downing, p. 262) is as follows:

"MACOMBER — Origin, Guilford, Maine. Tree a good annual bearer. Fruit, full medium, oblate, angular, yellowish, shaded and striped with red. Stalk, short. Cavity, large. Calyx, closed. Basin large and regular. Flesh white, fine grained, tender, sub-acid. Good. Core, small. December and January."

The same fruit was exhibited at the Winter Meeting of the Board of Agriculture in 1872, under the name of *Rolfe*.

Concerning the seedling apples exhibited, it must be confessed that they did not receive that degree of attention and careful examination which they ought to have had. This was not the fault of the awarding committee, but of the arrangement by which the seedlings were placed in the same division with single dishes of named varieties. Of the latter there were about 200 plates, representing more than sixty varieties. The labor of thoroughly examining and correctly judging so many specimens, is quite as much as should be imposed upon a single committee. As to the seedlings, it only appears that the premiums were "not awarded" and the varieties not named, consequently they are eligible for exhibition as seedlings another year if on further trial the growers shall deem them worthy of it.

CLASS 2.—*Pears.*

Entries for premiums Nos. 53, 54 and 55 were required to consist of five specimens of each variety exhibited, and for Nos. 56 to 81 inclusive, of ten specimens each.

53. For the best general exhibition of pears. Samuel Rolfe, Portland, \$15; Joseph Taylor, \$12; Alfred Smith, \$8.

54. For the best five named varieties of autumn pears. Joseph Taylor, \$5; Alfred Smith, \$3. G. B. Sawyer.

55. For the best five named varieties of winter pears. (No entry.)

56. For the best single variety of autumn pears. Joseph Taylor, \$3; Alfred Smith, \$2.

57. For the best single variety of winter pears. Samuel Rolfe, \$3; Alfred Smith, \$2.

58. For the best dish of Bartlett pears. (Not awarded.)

59. Belle Lucrative. Geo. B. Sawyer, \$2.

60. Beurre d'Anjou. Alfred Smith, \$2; Joseph Taylor, \$1.

61. Beurre Bosc. (No entry.)

62. Beurre Hardy. Samuel Rolfe, \$2.

63. Beurre Superfin. Joseph Taylor, \$2.

64. Beurre Clairgeau. Geo. B. Sawyer, \$2.

65. Beurre Diel. (No entry.)

66. Buffum. Alfred Smith, \$2; Joseph Taylor, \$1.

67 and 68. Clapps' Favorite and Doyenne Boussock. (No entries.)

69. Duchess d'Angouleme. Jos. Taylor, \$2; Alfred Smith, \$1.
 70. Flemish Beauty. Joseph Taylor, \$2; Hiram Conforth, West Waterville, \$1. Alfred Smith; Lemuel Dunbar, Waterville; S. C. Harlow.
 71. Fulton. Samuel Rolfe, \$2. Joseph Taylor.
 72. Glout Morceau. Alfred Smith, \$2.
 73. Goodale. Joseph Taylor, \$2.
 74. Howell. Geo. B. Sawyer, \$2.
 75. Lawrence. Joseph Taylor, \$2. Geo. B. Sawyer.
 76. Louise Bonne de Jersey. (No entry.)
 77. Seckel. Samuel Rolfe, \$2.
 78. Sheldon. Joseph Taylor, \$2.
 79. Urbaniste. Samuel Rolfe, \$2.
 80. Vicar of Winkfield. Alfred Smith, \$2.
 81. Seedling pears. S. C. Harlow, for a seedling from the Bartlett, originated at Bangor and named the Harlow pear, \$2. Joseph Taylor.
 Gratuity—to Alfred Smith, for a very fine dish of Marie Louise, \$1.

CLASS 3.—*Grapes.*

82. For the best exhibition of foreign grapes, grown with fire heat. (No entry.)
 83. For the best exhibition of foreign grapes, grown in cold grapery. H. P. Storer, Portland, (P. Wade, gardener,) \$10; Andrew S. Sawyer, Cape Elizabeth, \$8; Geo. B. Sawyer, \$5.
 84. For the best cluster of Black Hamburg. Geo. B. Sawyer, \$2. Andrew S. Sawyer, H. P. Storer.
 85. Wilmot's Hamburg. H. P. Storer, \$2. A. S. Sawyer.
 86. Victoria Hamburg. A. S. Sawyer, \$2. H. P. Storer.
 87. White Frontignan. (No entry.)
 88. Grizzly Frontignan. (No entry.)
 89. White Muscat. H. P. Storer, \$2. Geo. B. Sawyer.
 90. White Chasselas. Geo. B. Sawyer, \$2. Andrew S. Sawyer, H. P. Storer.
 91. Lady Downes. (No entry.)
 92. Buchland Sweetwater. H. P. Storer, \$2.
 93. Trentham Black. H. P. Storer, \$2. Geo. B. Sawyer.
 94. West's St. Peters. H. P. Storer, \$2.
 95. White Nice. (No entry.)
 96. Red Chasselas. H. P. Storer, \$2.
 97. Chasselas Musque. (No entry.)
 98. For the best collection of native grapes, (open air.) Galen Hoxie, Fairfield, \$10; Geo. B. Sawyer, \$8; J. A. Varney & Son, North Vassalboro', \$5; Lemuel Dunbar, \$3. Joseph Taylor.
 99. For the best single variety, open air, three bunches. Joseph Taylor, \$2. Geo. B. Sawyer, Lemuel Dunbar.
 100. For the best three bunches Delaware. Geo. B. Sawyer, \$1. Joseph Taylor, Lemuel Dunbar.
 101. Concord. J. A. Varney & Son, \$1. Joseph Taylor, Geo. B. Sawyer, Galen Hoxie, Lemuel Dunbar.

102. Hartford Prolific. Galen Hoxie, \$1. Geo. B. Sawyer,
Geo. H. Andrews, C. S. Pope, Lemuel Dunbar, J. A. Varney & Son.
103. Rebecca. (No entry.)
104. Allen's Hybrid. Geo. B. Sawyer, \$1.
105. Adirondack. J. A. Varney & Son, \$1.
106. Black Hawk. J. A. Varney & Son, \$1.
107. Creveling. (No entry.)
108. Massasoit. (Rogers' Hybrid No. 3.) (No entry.)
109. Wilder. (Rogers' Hybrid No. 4.) Geo. B. Sawyer, \$1.

Lemuel Dunbar.

110. Lindley. (Rogers' Hybrid No. 9.) Geo. B. Sawyer, \$1.
111. Agawam. (Rogers' Hybrid No. 15.) Geo. B. Sawyer, \$1.
112. Merrimac. (Rogers' Hybrid No. 19.) Geo. B. Sawyer, \$1.
113. Salem. (Rogers' Hybrid No. 22.) Geo. B. Sawyer, \$1.
Geo. H. Andrews, Lemuel Dunbar, J. A. Varney & Son.

Gratuities—to Geo. B. Sawyer, for native grapes grown under glass. (Allen's Hybrid, Diana, Delaware, Iona,) \$2; Andrew S. Sawyer, for fine cluster Trebiano, \$3; H. P. Storer, for fine dish Golden Hamburgh, \$2, for Black Prince, \$2, for Chasselas Fontainbleau, \$2, for Muscat of Alexandria, \$2; H. C. Frost, Monmouth, for fine display of Isabella grapes, \$1; also exhibited Northern Muscadine.

CLASS 4.—*Miscellaneous.*

114. For the best general exhibition of plums, not less than six varieties. (No entry.)

115–135 inclusive. For single varieties of plums, peaches, apricots and nectarines. (No entries.)

136. For the best dish of quinces. Hiram Conforth, \$2.

137. For the best ornamental dish of fruit. Pulsifer Bro's, \$3; Mrs. Geo. B. Sawyer, \$2. Mrs. A. B. Stratford.

138. For the best peck of cultivated cranberries. Alfred Smith, \$3; Mrs. A. B. Stratford, \$2. F. P. Haviland, Waterville.

139. For the best orange tree, in fruit. (No entry.)

140. " " lemon " " "

141. " " fig " " "

142. For the best exhibition of canned fruits, not less than five varieties, of domestic manufacture. Joseph Taylor, \$3; Miss E. S. Pearson, Vassalboro', \$2. Mrs. A. B. Stratford, Mrs. Geo. B. Sawyer.

143. For the best exhibition of fruit jellies, not less than five varieties, of domestic manufacture. Mrs. Geo. B. Sawyer, \$3. Mrs. A. B. Stratford.

144. For the best exhibition of pickles, domestic manufacture. Mrs. A. B. Stratford, \$2.

145. For the best exhibition of terra cotta ware, made in this State. Portland Stone Ware Co., \$10.

146. For the best exhibition of ornamental earthen ware, (vases, flower pots, &c.,) made in this State. Portland Stone Ware Co., \$5.

147. For the best oil painting of fruits or flowers. Mrs. F. L. Alden, Waterville, \$3; Same, \$2, (four paintings,—pansies, gladiolus, morning glories, fruits.) Miss I. M. Newhall, Waterville, (apple blossoms.) Mrs. W. W. Edwards, Waterville, (two paintings.) Gratuity, \$2.

148. For the best drawing or other picture of fruits or flowers. (No entry.)

Gratuity.—Mrs. G. B. Sawyer, for specimens sauces, ketchup, &c., \$1.

Honorable mention.—J. E. Woodhead, Chicago, fruit tree labels; Nathaniel Oak, Exeter, barrel carriers; Mrs. S. M. Newhall, Waterville, crab apple marmalade. Mr. Wendelin Busch of Waterville exhibited several full size portraits of citizens of Waterville, painted in oil by himself, which, though not within the range of objects for which the Society can award premiums, received general approbation for fidelity and artistic execution, and added much to the decoration of the hall.

CLASS 5.—*Flowers.*

FIRST DIVISION.

149. For the best display of cut flowers, filling not less than 100 vials, Mrs. Charles Stanley, Winthrop, \$10; J. A. Varney & Son, \$8; Mrs. F. A. Fuller, East Winthrop, \$5; Mrs. A. B. Strattard, Mrs. Russell Eaton, Augusta; Mrs. G. B. Sawyer, James Vickery, Portland.

150. Roses, not less than five varieties. James Vickery, \$2.

151. Dahlias, not less than ten varieties. Mrs. F. A. Fuller, \$2. J. A. Varney & Son.

152. Pinks. J. A. Varney & Son, \$2; James Vickery, \$1.

153. Japan Lilies. Mrs. G. B. Sawyer, \$2.

154. Asters, not less than ten varieties. Mrs. Charles Stanley, \$2; J. A. Varney & Son, \$1. Mrs. A. B. Strattard, Mrs. F. A. Fuller.

155. Pansies. Mrs. Charles Stanley, \$2; Mrs. Peter DeRocher, Waterville, \$1.

156. Zinnias. Mrs. A. B. Strattard, \$2; Mrs. F. A. Fuller, \$1. Mrs. Charles Stanley.

157. Phlox Drummondii. Mrs. A. B. Strattard, \$2; James Vickery, \$1. J. A. Varney & Son, Mrs. Charles Stanley.

158–160, inclusive. Stocks, Balsams, Crysanthemums. (No entries.)

161. Petunias. J. A. Varney & Son, \$2; Mrs. A. B. Strattard, \$1. Mrs. F. A. Fuller, James Vickery.

162. Gladiolus. (Not awarded.) Mrs. A. B. Strattard.

163. Tuberose. James Vickery, \$1. Mrs. A. B. Strattard, Charles S. Pope.

164. Verbenas. J. A. Varney & Son, \$1; Mrs. Peter De Rocher, \$2. Mrs. A. B. Strattard, Mrs. Charles Stanley, James Vickery.

165. Geraniums. J. A. Varney & Son, \$2. James Vickery.

166. Ferns. James Vickery, \$2.

Mrs. Moses Getchell, Winslow, exhibited a fine collection of Gladiolus and other flowers, which were not entered for premiums.

SECOND DIVISION.

167. For the best exhibition of green-house plants. James Vickery, \$10; J. A. Varney & Son, \$8.

168. For the best pair of parlor bouquets. James Vickery, \$3. Mrs. A. B. Stratford.

169. For the best pair of wall bouquets. Mrs. Peter De Rocher, \$2; Miss Martha Taylor, Wiscasset, gratuity, \$1.

170. For the best pair of hand bouquets. James Vickery, \$3.

171. For the best single bouquet. (No entry.)

172. For the best bouquet of Asters. Mrs. Charles Stanley, \$2; Mrs. A. B. Stratford, \$1. Mrs. F. A. Fuller, J. A. Varney & Son.

173. For the best bouquet of Dahlias. Mrs. F. A. Fuller, \$2; J. A. Varney & Son, \$1.

174. For the best floral design. Mrs. Charles Stanley, \$5; Mrs. A. B. Stratford, \$3.

175. For the best floral wreath. James Vickery, \$3. Mrs. Charles Stanley.

176. For the best floral dinner table decoration. Mrs. A. B. Stratford, \$1.

177. For the best basket of wild flowers. Mrs. Charles Stanley, \$1; Mrs. A. B. Stratford, Joseph Taylor.

178. For the best collection of flower seeds. Mrs. A. B. Stratford, \$2. Miss Edith A. Sawyer, Wiscasset, gratuity, 50 cts.

179. For the best exhibition of pot plants. (Not awarded.) James Vickery, J. A. Varney & Son.

180. For the best single pot plant. James Vickery, \$2; J. A. Varney & Son, \$1. Mrs. Peter De Rocher.

181. For the best hanging basket. James Vickery, \$3. Portland Stone Ware Co.

182. For the best exhibition of shrubs, in pots, in flower. James Vickery, \$3; J. A. Varney & Son, \$2.

183. For the best exhibition of dried grasses. Mrs. Charles Stanley, \$1. Miss E. S. Pearson, Vassalboro'.

184. For the best exhibition of everlasting flowers. Mrs. Charles Stanley, \$2; Miss E. S. Pearson, \$1; Mrs. A. B. Stratford, gratuity, 50 cents.

185. For the best Wardian case. (No entry.)

186. For the best aquarium, with plants. (No entry.)

187. For the best rustic stand, not less than three feet in height, filled with choice plants, James Vickery, \$3.

188. For the best rustic chair, home made. (Not awarded.) Joseph Taylor.

Special Premiums offered by James Vick, Seedsman and Florist, Rochester, N. Y., to amateurs only.

[Awarding Committee — James Vickery and J. A. Varney, Florists.]

For the best collection of cut flowers. Mrs. Charles Stanley, \$20; Mrs. G. B. Sawyer, \$10; Mrs. F. A. Fuller, \$5; Mrs. Russell Eaton, Augusta, Floral Chromo.

For the best floral work. Mrs. Charles Stanley, \$5; Miss Martha Taylor.

CLASS 6.

GARDEN CROPS AND VEGETABLES.

189. For the best exhibition and greatest variety of vegetables. Peter De Rocher, Waterville, \$8.

190. For the best exhibition and greatest variety of potatoes, not less than five varieties, one peck of each. W. H. Pearson, Vassalboro', \$5.

191. For the best single variety of potatoes, one peck. (No entry.)

192. For the best seed corn, not less than 20 ears, in trace. W. H. Pearson, \$2; F. E. Nowell, \$1.

193. For the best sweet corn, 12 ears. Joseph Percival, Waterville, \$2; Milton Dyer, \$1. W. H. Pearson.

194. For the best 10 blood beets. F. E. Nowell, \$2. W. H. Pearson.

195. For the best 10 turnip beets. (Not awarded.) W. H. Pearson, Peter De Rocher.

196. For the best cabbages, 6 heads. Peter De Rocher, \$2. W. H. Pearson.

197. For the best cauliflowers, 6 heads. (No entry.)

198. For the best carrots, 10 specimens. Peter De Rocher, \$2.

199. For the best parsnips, 10 specimens. Peter De Rocher, \$2.

200. For the best ruta bagas, 10 specimens. W. H. Pearson, \$2

201. For the best English or strap-leaf turnips, 10 specimens. (No entry.)

202. For the best celery, 6 roots. Peter De Rocher, \$1.

203. For the best peppers. (No entry.)

204. For the best onions, half bushel. (No entry.)

205. For the best tomatoes, 25 specimens. Charles S. Pope, \$1.

206. For the best marrow squash, 3 specimens. (No entry.)

207. For the best Hubbard squash, 3 specimens. F. E. Nowell, \$2; W. H. Pearson, \$1.

208. For the best Butman squash. (No entry.)

209. For the best turban squash. W. H. Pearson, \$2.

210. For the best Marblehead squash. W. H. Pearson, \$2.

211. For the largest squash. (No entry.)

212. For the best pumpkins. Joseph Percival, \$1. W. H. Pearson.

213. For the largest pumpkin. W. H. Pearson, \$1.

214. For the best musk melons, 3 specimens. (No entry.)

215. For the best water melons, 3 specimens, Galen Hoxie, \$1. Elmer Bowman, Waterville.

216. For the best citron melons, 3 specimens. Austin Bowman, Waterville, \$1.

Gratuity—to F. E. Nowell, for pop corn, \$1.

Respecting the leading features and general character of the exhibition, the Secretary gladly avails himself of the following full and carefully prepared editorial report which appeared in the *Maine Farmer* of October 14, 1876. This is done the more willingly as the article embraces the observations of a careful and disinterested observer, and also because it includes a succinct statement of the history and work of the Society and its relations to other societies and the public. For the sake of brevity some parts which are substantially a repetition of what has been elsewhere said, are omitted :

“The State Pomological Society—which has during its brief existence made a good record for itself by its fairs and publications—held its fourth annual exhibition at Waterville last week. It occurred at the same time, but was independent of the fair of the North Kennebec Society, a part of whose exhibition was held in the same building. The first exhibition of this State Society was held at Bangor, the second and third at Portland, and the fourth as above. Its first and third fairs were held in connection with those of the State Agricultural Society, its second and fourth having been held independently. At no exhibition it has ever held has there been a finer display than at the last, although some previous ones may have been larger ; and but once before has its hall been arranged with more taste and skill—that at Portland in 1874. While on some accounts it is to be lamented that by the formation of the State Pomological Society, the fairs of our State Agricultural Society have in some departments, been lessened in interest in consequence—yet on the other hand the former Society has by its publications, labors and fairs accomplished a grand work for Maine pomology, one which the old State Society could never have accomplished, because as it was conducted, it could not give that time to the patient detail necessary to achieve what has been done by the earnest labors and intelligent efforts of the workers in the new Society. The tendency of late years has been towards special organizations for special purposes ; as a result we have our fruit, dairy, poultry and horse associations, most of which hold their independent exhibitions ; and while they detract from the interest and success of an old State organization which

has for its object the promotion of all these branches, and which has done good work in the past; and while such influence is to be regretted, yet no one can honestly say these special organizations are not needed, and are not doing a most useful and creditable work. By every means let them all be encouraged and aided; there is work enough to be done, and in all laudable efforts for the good of our various State industries and interests, the laborers are always too few.

A GENERAL LOOK AT THE HALL. The fair was held in the new Town Hall at Waterville, a hall, which in its proportions, artistic decorations and appointments, is as neat and appropriate as it is elegant, and which is as positive a source of pride to the town as its predecessor was a disgrace—and we venture it has never in its brief history looked more attractively, or been decked with a more royal display, than this from the hands of Flora and Pomona, twin goddesses of beauty and fruitage. Entering the hall we find six long tables running lengthwise, and occupying rather more than one-half the area of the floor. Through the centre is a wide alley, and at the upper end of the hall the visitor passes from this alley under an arched way, to the stage. On each side of this arch are tables filled with pot plants, the stage being devoted to cut flowers. On the table at the right as one enters, under the gallery, is a special collection of picked varieties of apples; the upper end of the table being devoted to grapes. The second table is occupied by Androscoggin county, and the third by Kennebec—this comprises all the tables on the right of the main isle. On the left, the first half of the first table is given up to pears, the remainder being occupied by Kennebec county; the second table is taken by Lincoln county, and the third devoted to collections from Penobscot, Somerset, Waldo and Aroostook counties, and a few miscellaneous lots. Under the gallery at the right and left of the entrance, are two tables devoted to garden vegetables, canned fruits, &c., and also one at the left of the stage, a part of which is assigned to vegetables. Around the gallery rail is an attractive display of paintings and chromos, and in some show-cases at the extreme right, Carleton places on exhibition some of his unrivalled work in the photographic art. This comprises a general outline of the hall, the beauty of which cannot be described, and can only be appreciated after a close inspection of its various points of attraction. The gorgeous beauty of the many-

colored fruits and flowers, the delightful aroma from pears and grapes, the exquisite fragrance from lily and tuberose, and carnation—filled the hall with delight for the senses, and involuntarily led the mind upward in adoration of that Supreme Intelligence, who has caused the earth to yield these beautiful things for the service and good of his children. And the earth holds in store for whoever will have them by industry and intelligence, an abundance of just such gorgeous flowers, and just such luscious fruits as these which are before us in their indescribable beauty. Who will not make some effort to secure them?

LOOKING AT THE EXHIBITION more in detail, let us begin with the grapes; not because they are of first importance, but because just now, we happen to be standing here by the table on which they are displayed; in all nearly eighty plates from, perhaps, eight or ten exhibitors, and forming a most luscious and tempting sight. The out-door grapes on exhibition were specially fine, the season having been favorable for their growth and ripening; while of the foreign varieties, both those grown by heat and in cold houses, the display was exceptionally fine. * * * Forty-six of the seventy-nine plates on exhibition were native grapes, and of these, the prominent growers were Lemuel Dunbar, Waterville; A. S. Sawyer, Cape Elizabeth; J. A. Varney & Son, North Vassalboro'; G. H. Andrews, Monmouth; Joseph Taylor, Belgrade; G. B. Sawyer, Wiscasset, and Galen Hoxie, Fairfield. The Messrs. Varney had eleven varieties, including the Martha, Hartford, Black Hawk, and several of Rogers' hybrids. Mr. Sawyer of Wiscasset, shew thirteen varieties of natives, among which were the Martha, Eumelian, Perkins, Delaware, Hartford, Concord, and some of Rogers' hybrids. He also had a good display of natives grown in a cold grapery, which shows what protection in our climate will add to the size and condition of grapes, which, ripened out of doors, are often not eatable. His collection of out door grapes was the best on exhibition. Mr. Hoxie had some very nice Delawares, Concords, and Hartfords. Of the foreign grapes the shew was very good, the exhibitors being G. B. Sawyer; Patrick Wade, gardener to H. P. Storer, Portland, and A. S. Sawyer, Cape Elizabeth. Mr. Wade shew thirteen plates, Mr. A. S. Sawyer eleven, and Mr. G. B. Sawyer five. Mr. Wade had the largest collection, but the best bunches were shown by his neighbor over on the Cape, Mr. Sawyer, who had two specimens of the Trebbiano,

a grape not much known among us, but of great excellence, being by a long ways ahead of anything ever seen at our pomological fairs. Almost equally noteworthy were his Victoria and Wilmot's Hamburgs. Mr. Wade's best specimens were elegant clusters of Victoria Hamburg, White Muscat and Wilmot's Hamburg. He also had five bunches of Muscat of Alexandria, White Muscat, Trentham Black, Golden Hamburg and Chasselas de Fontainebleau. Now that we are here, let us follow down this table loaded with

THE BEST APPLES IN THE HALL, selected by their exhibitors from among the grand lots in the hall, with a view of competing for the prizes offered for the best ten specimens of each variety shown. And a grand sight it is; one hundred and nineteen plates—every apple on which is superb and perfect, and all of which will this week be on exhibition at Philadelphia, where we are positive they will take no “back seats.” The leading contributors here are Pulsifer Brothers, East Poland; Friend Joseph Taylor, Belgrade; A. Smith, Monmouth; S. H. Cole, Lewiston, and S. C. Harlow, Bangor. The apples on this table are choice representative specimens, and we deem it fair to say no such apples were ever before brought together for a competitive exhibition in this State. The sorts that appear most noteworthy are the Nodhead, of which Friend Taylor has the best—Mr. Pulsifer's coming close to his; Baldwin, one of which, showed by Mr. Smith, who leads off, weighs $10\frac{1}{2}$ ozs; Roxbury Russet, the variety from which a larger profit is realized than from any other grown in Maine on account of its late keeping habit; Yellow Bellflower, the best being shown by G. H. Andrews of Monmouth; Fairbanks, a highly esteemed and handsome sort which originated in Winthrop; Hubbardston Nonsuch, of which Pulsifer Brothers have the best; Northern Spy, C. S. Pope, Manchester, taking the lead; Rhode Island Greening, Spitzenburg, King of Tompkins County, Gravenstein, Williams' Favorite, and Porter—Pulsifer Brothers showing some very elegant specimens of the latter, the best we think, ever grown in the State, and among the handsomest in the hall. A good arrangement of this table was shown in having each plate of a certain variety grown by different exhibitors placed side by side for easy examination and comparison by the judges; this being only one of a number of sensible little plans instituted by the managers for

the convenience and satisfaction of committees and spectators. Perhaps no where in the hall is the benefit of the

LIBERAL FEEDING OF APPLE TREES, more noticeable than at this table. Here are specimens of well known varieties excelling others in size, color and flavor ; so that often one is at a loss to determine if he is not mistaken. Then comes the inquiry, "What is the difference?" Feed, feed, is the one answer; manure your trees and get good fruit—starve them and get poor, knotty, hide-bound, scurvy, worthless apples. Why not be liberal in applying dressing to your orchards as well as to your cornfields? You will surely get your pay for it. The next table embraces a collection from

ANDROSCOGGIN COUNTY, the exhibitors being Pulsifer Brothers, East Poland; S. H. Cole, Lewiston, and Mr. Richardson, Greene; the table containing seventy-two varieties—not a duplicate among them—of which the Messrs. Pulsifer contributed fifty-four sorts. This table embraces all the best known and most popular varieties grown in the State with some nice apples of local reputation only, and not described in the books; among these latter are the Noyes, which originated in Minot, a very handsome apple, in season with the Nodhead, very salable, equal to Nodhead in size, juicy and crisp; and the Early Orange, originated in Poland, better than the Porter for cooking, because it is more distinct in flavor, and does not lose its taste in cooking; hardy and a good bearer. The Messrs. Pulsifer have a young orchard, and have not been prominent exhibitors until within the past few years. Their annual crop is 300 barrels, which will be reduced to 100 barrels on account of caterpillar ravages; notwithstanding they kept one man employed for a whole month before the trees leaved out in spring, picking off the clusters of caterpillar's eggs—a job which Mr. Pulsifer says paid well. They make a specialty of growing the Roxbury Russet, Baldwin, Rhode Island Greening, Talman's Sweet and Black Oxford. Mr. Pulsifer recommends the following as a good variety for Maine growers:—early fall: Sweet Bough, Porter, Early Harvest and Yarmouth Cat Head; late fall and early winter: Nodhead, Hubbardston Nonsuch; late keeping sorts: Baldwin, Roxbury Russet, Talman's Sweet. A large number of varieties he regards as very perplexing and unprofitable, and would recommend orchardists to grow for profit, not more than four or five, each, of the fall and winter varieties. At the head of the

KENNEBEC TABLE, we find Friend Joseph Taylor, with fifty-two varieties, comprising the well known fall and winter sorts. In making up his collection Friend Taylor has included several locally famous apples, among them the Zachary Pippin, an early winter apple of positive merit which originated in Belgrade; Judy, a handsome red sweet apple of fine quality, a native of Rome; Flanders, a pleasant sour fall apple from Dexter; Columbus, a large red apple, which originated in Belgrade; Stuart, a very nice fall apple from Belgrade, and Sweet Greening, an excellent fall apple, the scions of which were brought from Martha's Vineyard as many as seventy-five years ago. Besides these, Friend Taylor has remarkably fine samples of the Nodhead, Baldwin, Somerset, Porter, Williams' Favorite, Dean, (a very handsome apple,) and King of Tompkins County. On this table are smaller but very creditable exhibits from J. A. Varney & Son, and Charles S. Pope. The Kennebec collection crowds itself on to the fourth table, at the head of which is a fine exhibit from

A. SMITH & SON, MONMOUTH, which comprises fifty varieties, all of uniform excellence. In this lot are the Porter, Northern Spy, Baldwin, Fall Harvey, Talman's Sweet, Vandevere, Nodhead and many others. Mr. Smith makes a specialty of Roxbury Russets, and last year kept his crop till July, and then marketed them in Bangor for \$7 per barrel. At this price who questions the statement that it is the most profitable variety grown in the State? Adrian Bowman of Waterville, had a collection of very noticeable specimens, although no attempt was made by him to show a large number. His Early Harveys, Baldwins and Nodheads, were certainly elegant; while he had very fine samples of the King of Tompkins County, Black Oxford and Northern Spy, and good Roxbury Russets and Talman's Sweets. Russell Eaton of Augusta contributed specimens of Hubbardston Nonsuch, Fall Harvey, Northern Spy and Winthrop Greening, all of which were very large, uniform and well grown. From the fourth table, the Kennebec collection again crowds itself over upon the

FIFTH TABLE, where it makes a display, which of itself would be notable even as a county exhibit, at a State Fair. Messrs. J. Pope & Son here show between twenty and thirty varieties of fall and winter fruit from their celebrated orchard at Manchester, from which they are this year getting a fair yield, despite the unfavorable conditions. Henry Taber of Vassalboro' has about twenty

varieties, all choice specimens. Daniel Ayer of the same town shows eleven plates, among them elegant specimens of the Starkey, a Vassalboro' apple of high character; fine Talman's Sweets and King of Tompkins County, with good specimens of the Twenty Ounce, Wagener, and Queen Vic—about which we know little. J. S. Weeks also of the same town, has a few lots, and F. W. Runnells, Clinton, shows eighteen varieties, some of which are fine looking apples, but his collection is wanting in value though not in interest, because so few of the sorts have names attached. And when apples get "skiting off," how hard it is, even for experts to identify them and bring them back to their proper places. Many of his esteemed varieties could not be identified, and will probably pass on down the mouths of future hungry children, with their true names unknown. The remainder of this table, comprising in fact nearly all of it, is taken up with the

LINCOLN COUNTY COLLECTION, which carries away the palm for the largest collection, having one hundred and sixteen plates and over one hundred distinct varieties. This collection was made up by Mr. Sawyer, the Secretary of the Society, and was contributed to by John Currier and H. J. A. Simmons of Waldoboro', L. H. Winslow, Nobleboro'; D. C. Pottle, Alna; G. B. Sawyer, Henry Ingalls, J. M. Knight, Dr. S. B. Cushman and Arnold Greenleaf of Wiscasset, and others. The latter gentleman sent a specimen of a sweet apple about which we should like more information. It is a red showy apple, one of the handsomest in the hall, and although in fair eating now, will keep to the last of November. Mr. Currier made a specialty of sweet apples, of which he shew seven or eight sorts. Mr. Pottle contributed twelve varieties. Mr. Simmons nineteen, and Mr. Knight ten. We cannot help thinking, looking at these one hundred distinct varieties, and remembering that our most experienced cultivators tell orchardists to grow but few sorts, and make a specialty of them, whether the Society could do better than to discontinue all efforts towards encouraging the showing of the greatest number of varieties, and give larger premiums to a smaller number of select sorts. Turning to the left we come to the last, or sixth table, where Mr. S. C. Harlow of Bangor, leads off the

PENOBSCOT COLLECTION, with fifty varieties—a fine exhibit. Among them are the Beauty of Kent—a very showy apple; Alexander, another large and showy sort; Northern Spy, very fine

samples ; Maiden's Blush, Ben Davis, Stone Sweet, Job (?) Kilham Hill, Lane, (?) and other well known sorts. Nathaniel Oak, Exeter, was the only other contributor to the Penobscot table. He had a good exhibit of some twenty varieties, among which were the President, Milding—a somewhat well known New Hampshire apple worthy of dissemination—Wood's Sweet, Doctor, and others. * * * * * *

Upon this table were also shown several smaller county collections, one of the largest of which was that from Waldo county, entered by Mrs. A. B. Strattard of Monroe, which comprises some sixty plates, showing besides the leading hardy sorts, good specimens of the Porter, Hubbardston Nonsuch, Maiden's Blush, Keswick Codlin, American Golden Russet, Orange Sweet, Yellow Bellflower and Naked Limbed Greening. The latter is supposed to be a native of Waldo county, bears every year, and is one of the best sorts in Maine. Frank E. Nowell, Fairfield, puts in thirty sorts from his orchard for the Somerset collection, noticeable among which are the Baldwin and Northern Spy. Had other growers in southern Somerset done as well, their county collection would have taken high rank. John Hanscom, Saco, put thirty-two varieties into the York county collection, his specimens of the Granite Beauty, Greening, Baldwin, Yellow Bellflower and Bottle Greening, being especially fine. Upon this table are a few plates from

AROOSTOOK COUNTY, worthy of notice—Henry Tilley, Castle Hill, (latitude $46^{\circ} 40'$) contributing half a dozen plates, on which are small specimens of Famense, Sops of Wine, Hyslop Crab, and an apple which he calls Beauty of Kent, but which is incorrectly named. Columbus Hayford, Maysville, sends specimens of a seedling, which is good till April, but will keep till June, and which, we should think, would be esteemed in that section. We are pleased to notice these apples from our high latitude, but believe Aroostook can do much better than she has this time, with a little effort. Milton Dyer, Cape Elizabeth, one of the successful market gardeners of Cumberland county, who lives on the light "table-land" about one mile from Portland Light, and in a somewhat exposed and bleak situation, brought down some twenty-five sorts, just to show what could be done at growing apples on the sea-coast. His specimens were generally small, and not so fair as those grown in some other localities, but of

Porters, Baldwins, and Northern Spies, he had, however, very nice specimens. This closes our somewhat hasty examination of the apples, and we now give attention to the

COLLECTION OF PEARS, which occupies a position on the centre left-hand table near the main entrance, and of which there are in all sixty-four plates. At the head of the table—the post of honor, and in this instance justly deserved—is the exhibit of one of our veteran and most enthusiastic contributors, Mr. Samuel Rolfe, Portland, who has twenty-eight varieties, nearly double the number of any other contributor. Mr. Rolfe recommends for culture in Maine for those who can grow but a few sorts and who wish a succession, the following: Bartlett, Louise Bonne of Jersey, and Beurre Langelier. The Sheldon is a very nice fall sort, and the Fulton—a native of Maine—is an excellent fall pear. The Flemish Beauty he cannot grow, on account of its cracking. Beurre d'Anjou is one of the best grown, and was recommended by the American Pomological Society, as the best single pear in America. A. Smith & Son, Monmouth, shew fourteen varieties, including the Marie Louise—if well grown, rich in flavor and equal to the Bartlett when in season—Louise Bonne of Jersey, Flemish Beauty, of which they had good specimens, Vicar of Winkfield, Glout Morceau, and Duchess d'Angoulême. Friend Taylor had thirteen sorts, noticeable among which were his Flemish Beauties, which fairly beat the State. He had specimens of the Goodale, which is not yet bearing well, but which he hopes may come on in a year or two. It is a pear of much promise, but he cannot speak of it with much positiveness. He also has the Lawrence, a choice winter sort, Buffum, Duchess, Sheldon and other kinds. Mr. Harlow of Bangor, has two or three plates, Mr. Sawyer of Wiscasset, four, and other exhibitors one each.

In the department of vegetables there were but few contributors. W. H. Pearson, Vassalboro'; Peter De Rocher, Waterville, and Frank E. Nowell, Fairfield, each shew general collections which were creditable and interesting. The former had eight varieties of potatoes. Joseph Taylor, Mrs. G. B. Sawyer and Mrs. A. B. Strattard, made exhibits of canned fruits, jellies, pickles, &c. Passing to the upper end of the hall, we find the centre space occupied with a large collection from the Portland Stone Ware Co., consisting of lawn vases, hanging baskets, ornamental flower pots, vases, terra cotta ware, &c. It was a fine display.

CRANBERRIES. Mr. A. Smith of Monmouth, shew some very handsome cranberries which he raised on a swale planted to vines four years since, and covering twelve square rods, from which he gathered a bushel this year. He plowed the ground four inches deep and set the plants four feet apart. Nearly every farmer has land which might be utilized in this way, and thus provide himself with a most valuable fruit. Mrs. A. B. Strattard of Monroe, has some large cranberries, raised upon a piece of wet land thirty feet square, set four years ago, from which one and one-half bushels were gathered this year. F. P. Haviland of Waterville, also contributes a dish of cranberries.

STOVE AND GREEN-HOUSE PLANTS. There were but two exhibits in this department; one from J. A. Varney & Son, North Vassalboro', the other from James Vickery, Portland. Mr. Varney's collection embraced one hundred and fifty pots, most of them well grown and looking fresh and healthy. Besides the ordinary plants of such a collection—geraniums, fuchsias, ferns, coleus, lantanas, he had a nice little collection of cactuses, several fine sedums, begonias, ivy geraniums, marantas, abutilons (including the unique climbing variety), dracænas, &c. Since the Messrs. Varney started their Excelsior Conservatory at North Vassalboro', they have met with good success, and it is a pleasure to see so good specimens of choice plants, grown in a locality where they were formerly but little known, as were those exhibited by them. Mr. Vickery had a smaller general collection, than his competitor, many of the same kinds, and some which far surpassed anything exhibited by Mr. Varney. This was true of his cissus discolor, of which he shew an elegant specimen, of several fine caladiums, a number of choice heaths, and three or four treceinas. He also exhibited several elegant coleus; two or three dozen ferns (some of which were quite rare and handsome, especially the Hares-foot), some fine begonias and varigated ivies. His collection as a whole was very choice. Now let us ascend the stage and examine the

DISPLAY OF CUT FLOWERS, exhibited by Mrs. A. B. Strattard; Mrs. Geo. B. Sawyer; Mrs. Russell Eaton, Augusta; Mrs. Charles Stanley, Winthrop; Mrs. F. A. Fuller, East Winthrop; James Vickery, Portland, and J. A. Varney & Son, North Vassalboro'. From the considerable distance at which some of the flowers had been brought, they were not looking as fresh as could have been wished, but on the whole made a highly interesting show. These

several exhibits were made for the Society's premiums, as well as for the special Vick prizes to amateur growers, from which competition commercial florists were excluded. The Messrs. Varney exhibited nearly 150 phials, among which were 30 distinct varieties of verbenas, 35 of petunias, 25 of carnations and dianthus pinks, 23 of asters, 15 of phlox, and 12 of dahlias. Mr. Vickery made little attempt to make a large exhibit, but had a choice lot of rose buds and tuberoses, with about 25 varieties of verbenas and a dozen dahlias. The collection of Mrs. Stanley was very fine, comprising good phlox and asters, 25 varieties of verbenas, half a dozen choice gladioli, 27 select pansies, and 50 dahlias. Her neighbor Mrs. Fuller, had a very choice display, in which were 74 distinct dahlias, most of them well grown, and 23 varieties of asters. Mrs. Sawyer's collection, without being large, was choice; and Mrs. Eaton's fair. To our mind, and without knowing the action of the awarding committee, we should say that Mr. Varney had the best commercial, and Mrs. Charles Stanley the best amateur collection. Mr. Varney had the best verbenas; Mrs. Fuller the best dahlias; Mrs. Stanley the best asters, and Mrs. Sawyer the best arranged exhibit. It was not so strong in varieties as some others, but embraced more sorts and was arranged most attractively. Of wreaths, table decorations, bouquets, crosses and floral designs, the fruit tables displayed a goodly number. Mrs. Strattard shew a very pretty design for a dinner table decoration, a large floral cross, and two crosses of everlastings. Mrs. Charles Stanley shew a floral design—a monument covered with green overlaid with flowers, on the top of which was a vase of gladioli—also an elaborately constructed wreath of crystalized grasses and everlastings, a really artistic piece of work. Mrs. Fuller shew an elegant bouquet of dahlias, and Mr. Vickery made an exhibit of hand and parlor boquets. Among the other similar objects with which the tables were decorated, was a vase loosely but artistically filled with delicate gladioli and native ferns, which won much admiration. It was contributed by Mrs. Moses Getchell of Winslow.

On account of the very small number in attendance, all the intellectual exercises arranged for the meeting were postponed, with the exception of the Annual Meeting of the Society, which occurred on Thursday evening.

[CONCLUSION. We have given a somewhat minute report of this exhibition in the several departments, because its importance

seemed to warrant it. Never, perhaps, in our State has so well arranged and perfect an exhibition of our Maine fruits been brought together, as on this occasion; and it was a matter of constant regret that so few persons were present to enjoy and study it. During a portion of the time it was accompanied by unfavorable weather,—but, judging from the attendance with which it opened, it would hardly have been better had good weather continued throughout the week. And yet the extent, character, and systematic arrangement of the exhibition was such that it would have been a paying investment for every fruit-grower of any pretensions, to have spent two days in a careful study of the varieties on exhibition. They would, in that time, have obtained a better practical and correct knowledge of fruit than they could by a twenty years' experience on their own farms; and taking advantage of the knowledge they would have gained, could have carried on their business with higher intelligence and larger profit. What they have lost by not attending this exhibition will always be a source of regret, but it can in part be made up to some, by visiting future fairs of the Society.

The arrangements for systematizing the exhibition, not only for the convenience of the exhibitors and judges, but for the benefit of the public, were most complete—involving a deal of labor on the part of the Secretary, which were in most instances admirably carried out. Fruit lists, separate labels for varieties, and exhibitors' names, accompanied each exhibit; and by the use of various blanks and printed forms the essential and imperishable facts of the exhibition, regarding each individual sort and variety, were recorded for the future use of the Society and the future good of the Pomology of Maine. These results will appear in the transactions of the Society, and there its good will become immortal, even though the beauty of its loaded tables last but a few days, and is seen by but few persons.

It is discouraging, we must admit, to hold these fairs year after year, to go through with the labor they involve, have nobody attend them, and in the end find it impossible to meet the small bills incurred, by the still smaller receipts which come into the treasury of the Society. This ought not so to be. The Society should have a thousand annual members in this State, and it soon would have, did fruit-growers but appreciate the importance of the work it is doing for the good of Maine Pomology, one of the great interests of our people. They must awake to this matter, and lend

a helping hand, or this Society, which has been kept alive by a few zealous men whose efforts and labors have been unremittingly performed, and which have been productive of marked results for good—will surely go down. Has it not proved itself deserving of a worthier fate?"

THE ANNUAL MEETING OF THE SOCIETY

was held on Thursday, the third day of the exhibition, at which officers were elected for the ensuing year, (as elsewhere named), votes of thanks were adopted—to the town authorities of Waterville for the liberal facilities afforded for holding the exhibition, to the citizens for their assistance and coöperation in the same, and to the Maine Central and Knox & Lincoln Railroad Companies for granting free return tickets to persons in attendance; and the remaining business was postponed to the Winter Meeting, invitations for holding which were received from the Farmers' Club of Monmouth through Mr. Geo. H. Andrews, and from the citizens of Waterville through Joseph Percival, Esq., President of the North Kennebec Agricultural Society.

On the fourth day a collection of specimens of Maine Fruits was made up and forwarded for exhibition at the Centennial Exposition, numbering 150 varieties of apples and a few of pears, and Messrs. Z. A. Gilbert and J. A. Varney were appointed as a committee to attend the same. (Their report will be found in full in the proceedings of the Winter Meeting.) Then came the general packing and clearing up, and with the social festivities of the evening and the leave taking—with its indifferent pecuniary results, but with its higher and better and more enduring success in its educational, æsthetical and social results—our fourth exhibition ended.

PROCEEDINGS OF THE WINTER MEETING.

The fourth Annual Winter Meeting of the Society, (being an adjournment of the annual meeting held at Waterville as before stated), was held at Monmouth, in the Congregational Church, on the 23d and 24th days of January, 1877, in accordance with the following

PROGRAMME.

“TUESDAY, January 23d, at 3 o'clock P. M., Preliminary Business Meeting.

At 6½ P. M., Public Meeting. Address of Welcome by M. J. METCALF of Monmouth. Reply to same, and Annual Address by Z. A. GILBERT, President of the Society. The remaining time to be filled by discussion of subjects presented.

WEDNESDAY, 9 A. M., Business Meeting: Annual Reports of Officers, Election of Officers to fill existing vacancies, and other business.

10 A. M., 1½ P. M., and 6½ P. M., Public Sessions,—during which the usual Exhibition of Winter Fruits will be held, to which all are invited to contribute, especially of new and rare varieties; and the following subjects will be presented for consideration and discussion:

Fruit growing in connection with general farming.

Natural adaptation of soils to fruit culture.

Report on fruit and flowers at the Centennial, by the delegates of this Society.

Report of the Committee on list of fruits for amateur cultivation.

Report of the Corresponding Secretary, Dr. J. C. WESTON of Bangor.

County and Local Reports on fruit growing, by the several Trustees and others.

Revision of the Society's Fruit Lists.

Voluntary Essays and Reports, by Members and others.

An Address by Dr. N. T. TRUE of Bethel; Subject, 'The soil and its preparation for an orchard.'

The exercises to close with a Social Reunion of the Members and guests, with ladies, to be held in the Vestry, at 8 o'clock P. M."

The place of meeting had been selected as one of the strongholds of the Society, being a central point in a locality long celebrated for the production of fine fruit; and embracing among its population many valued members of the Society. A general invitation had been extended to the fruit growers and horticulturists of the State, by printed circulars, posters and publication in the newspapers; free return tickets were issued by the Maine Central and other railroad companies, and all persons attending were freely and hospitably entertained by the people of Monmouth, who were unremitting in their efforts to make the meeting a pleasant and profitable one. The weather proved propitious. The attendance was much larger than at any previous Winter Meeting, filling the spacious auditorium of the church at each public session and affording gratifying proof of the progress of the Society.

The exhibition of winter fruits was quite satisfactory, embracing a great variety of specimens, all in fine condition, neatly arranged and correctly named, and generally of superior quality. For full details of the exhibition reference is made to the report of the special committee on the subject in subsequent pages. The tables were decorated with an elegant basket of cut flowers from the conservatory of the Misses Pope of Manchester, and some fine plants in pots contributed by the ladies of Monmouth.

It is much to be regretted that the shortness of the time assigned for the meeting prevented the full consideration of all the subjects embraced in the programme. In every other respect the meeting was a most gratifying success.

FIRST DAY.

The Society assembled pursuant to adjournment, at the time and place designated, and was called to order by the President. Then proceeded to arrange the order of exercises for the public sessions. Messrs. Alfred Smith of Monmouth, F. M. Woodward of Winthrop and Charles H. Jones of Warren, were appointed a committee to examine and report upon the exhibition of fruit.

Adjourned.

Re-assembled at 6½ P. M., the President in the chair.

M. J. METCALF, Esq., of Monmouth, then presented the following

ADDRESS OF WELCOME.

*Mr. President, and Gentlemen of the
Maine State Pomological Society:*

I have the privilege and pleasure in behalf of the members and friends of your Society in the town of Monmouth, to extend to you a hearty welcome to this gathering and to the hospitalities of our homes. We thank you for so promptly accepting our invitation to hold this meeting of the Society with us, and we trust it will appear that in so doing you have acted wisely.

To the most of mankind the precise location of the garden of Eden is an unsettled question; but, (pardon our vanity), to *us* the town of Monmouth occupies that ground; and we have learned in this restored and improved Paradise, with its almost numberless pomological products, and our much enlarged wants and necessities, that there is no such thing as "fobidden fruit"; and though we dwell not in Italy or the "Sunny South" we literally sit under our own vines and trees, with our wants well supplied and none to molest or make us afraid.

In the days of our grandmothers their store-rooms and tables were always supplied with an indispensable stock of *dried apples and pumpkins*. In these, our golden days of progress and prosperity, with increased numbers and varieties of richer and finer fruits, we reckon the former coarse and less nutritious fruits as comparatively of no account. Long ago in this, *our garden of Eden*, there were fruits of so poor a quality that their use by man or beast might well have been prohibited. The apple trees of those days, although stalwart and vigorous as the primeval products of the forest, bore small, sour and unnutritious fruit,—just fit to make the sourest and hardest cider, with which to manufacture the sourest and worst of drunkards; and to a great extent they produced their legitimate results.

It is discreditable to any man to have a poor, miserable fruit tree when he might just as well have a good and profitable one. And the tree itself shares in the discredit of its owner. A "sour apple tree" is an object of contempt and has been assigned to ignominious uses.

But, Mr. President, by the faithful and untiring labors and influence of this and similar societies, our Eden—and many another one, too—has not only been made to "bud and blossom as the rose," but has been made to bear an increase of better fruit,—“some

thirty, some sixty and some an hundred fold." Horticulturists and fruit-growers, at least as much as any other class, have learned that they may and ought to be co-workers with God in re-creating and improving His works; that it is their privilege and duty to keep their eye on the great Supreme Producer and be ready to take His work in its partial development and carry it on to maturity and perfection; to take the wild olive tree and ingraft in it the good olive; to make the crooked, sour, unpromising tree bear good, wholesome and abundant fruit,—corresponding with and compensating the labor, patience, ingenuity and skill of the more advanced, prosperous and happy inhabitants of the new Paradise,—of the better and more fruitful civilization.

In closing I again say, Welcome,—with the renewed expression of the hope that we may have a pleasant, interesting and profitable meeting.

PRESIDENT GILBERT responded:

In behalf of the Society allow me to thank you, sir, for this generous welcome so fittingly expressed. It gives us encouragement to know and feel that we are welcomed here in the town of Monmouth. It is also a pleasure to know, as we do from the audience here assembled as well as from your words, that we did well to come here. It encourages us to know that we have come to a place where the people are interested in what we are doing.

It is a fact that all blessings are not showered down on one spot. I believe it to be a fact also, that in any thrifty and prosperous town in the State of Maine, such as the town of Monmouth is, the people enjoy as many of the blessings of life as are given in any locality in our country. It is true we have rigorous winters, but they give us their compensation, and we are not subjected to the enervating influences of long-protracted and depressing heat, which are experienced in warmer latitudes. The very air we breathe gives us activity. The very atmosphere which sends us the snow storms gives us health. The extreme cold compels us to active exertion, and while we protect ourselves against it we keep our minds active and our affections warm. So we have compensations for our inconveniences, and when the balance is struck we have the heaviest column on our side.

In preparing a programme for this meeting, we have endeavored to bring out those points which seem most appropriate to the time and place and to correspond somewhat with the occupations and

tastes of those with whom we meet, and we hope that we have succeeded in arranging a programme that will be satisfactory, and that it may be so carried out as to be acceptable to those who may seek to receive benefits therefrom.

In this county were made the first efforts in our State for the progress of agriculture, including horticulture and pomology. In the town adjoining this, and in this town too, the leading men put forth the first efforts to lead the rural population up to a higher standard and a greater prosperity. The people of this section have never forgotten those teachings. You are to-day profiting by them. You are leading better lives; you are a more prosperous, more intelligent, and happier people than you would have been but for these efforts and teachings.

I say you are reaping the advantages of these efforts. The growth may have been slow, but surely does the leaven work. And as surely as you are the better for the efforts of the farmers who preceded you, so surely will our efforts, if we work wisely and well, bear their fruits. So we have a responsibility. It is important that we work well, remembering that we are working not for to-day only but for all time to come; and with this assurance, realizing the importance of our labors and the necessity for them, we have this compensation—that as a Society we have been fortunate ever since our organization in falling among friends; and that the efforts of the Society in the cause for which we are laboring are appreciated by the best class of our people. We believe this from the fact that wherever we have gone we have met with a warm welcome, but never more so than at the present time. We feel doubly encouraged in view of this.

Allow me then, in closing these remarks, to again thank you for the welcome that we have received, and also, lest there may not be another opportunity, let me tender the thanks of the Society for the hospitable entertainment that has been proffered to us. These kindnesses of yours are appreciated; the recollection of them will be carried home by us, and will remain in our memories as pleasant reminders of this occasion.

ANNUAL ADDRESS OF THE PRESIDENT.

PRESIDENT GILBERT then addressed the Society as follows :

Ladies and Gentlemen,—Members and Friends of the

Maine State Pomological Society:

In obedience to your call I again address you upon topics relating to the success of our youthful Society. Another year with its results has been folded into the past, and we, mindful of the lessons it has taught us, and looking around for the results which it has brought, again buckle on our armor, and with strength renewed from the efforts of the past and courage ever hopeful in view of the broad fields of active life ever open before us, enter again into our labors in the full assurance that as they are faithfully performed so will they in due time be rewarded. Such is life,—ever hopeful, ever laboring. Is that labor always faithful?

What, then, are we as a Society endeavoring to accomplish? It cannot be charged that it is self-aggrandizement or personal emoluments, for the history of nearly all societies having similar and related purposes has proved that such results are not often attained and need not be expected. There is, however, in all communities, and especially in our own State, a call for efforts looking to the promotion of pomology, and of horticulture in general. Into these labors we as a Society have entered. However self-sacrificing these labors may be, the field stretches away before us and calls us to its work. It is a duty we owe to the community in which we live that we respond to this call. Public spirit is a quality which every one should feel himself in duty bound to cultivate. No one has a right to complacently fold his arms and leave the work of driving on the march of progress wholly to other hands. As another has truthfully said, "Every man should look out upon the community in which he is living and ask himself what he can do for its improvement." Were not such efforts put forth and continually kept up in the moral and social world we should soon relapse into barbarism. So too, in the world of the beautiful around us efforts are needed, and example is contagious. Look at the noble, self-sacrificing labors of those who have been instrumental in surrounding our houses with much that contributes to our happiness in life. Have not their labors received a compensation in the blessings we are now enjoying? And shall not we continue those labors, that others may receive like benefits?

Though horticulture is not necessarily connected with farming, yet farming is not complete without horticulture. It is the æsthetics of farming—the poetry of farming. Thus the whole community is within the reach of the efforts we are endeavoring to put forth. Is not the field broad enough—is not the work sufficiently inviting for our united efforts?

We want to extend the usefulness of our Society by drawing to our ranks more working material. We need large accessions to our list of members—not wholly for the fees, but also that we may have a larger number from which to draw for such services as may be from time to time needed. A few individuals, working over the same ground year after year, without having their labors seconded and encouraged by others, will become weary in well doing. They need to come in contact with outside enthusiasm that they may imbibe its spirit and thus be spurred on in their labors. Where, too, labor of the same kind is required of them many times repeated, they are apt to repeat themselves, and thus their productions are simply a repetition. Say what we will about education and progress, there is but little about any of us which is purely original, and if we are required to draw all that at one time then we must fall out of the ranks or repeat ourselves. So we need more members that we may have more workers. We need the help of those who are gathered here at this time, not only to sustain this meeting, but also to sustain the Society in future years. We have had your assistance in arranging for this meeting, and we need it as well and hope to have it, in other directions.

We also invite membership that those who thus enroll themselves may be benefited at the hands of the Society. If we succeed in making the Society useful, as we hope to, and trust that in the past in some measure we have done, then its members to that degree are and will be benefited. And any one who thus joins hands with us cannot fail of greater benefit than he will receive standing aloof merely an interested looker-on. So, while you will benefit the Society by membership, it in time compensates you for this confidence.

Our methods of work need no essential changes, yet we may and should expand them to some extent, as we have been from time to time endeavoring to do. We are endeavoring to reach the people through three well defined channels: By holding annual exhibitions; by holding meetings like this for the reading of

essays and the discussion of topics; and by publishing our proceedings for distribution over the State. Our aim is to reach the people, and we know of no better methods in our present condition than the above named. We realized in the start some of the obstacles we are finding in the way of success. The object of an exhibition is to draw together the people, and by the beauty and variety there displayed, educate them to a higher appreciation of the importance of horticulture and awaken in them an enthusiasm that will spur them on to greater and more successful efforts to secure for themselves surroundings of beauty and utility, that the standard of their lives may be elevated, and life itself made more pleasant and useful. But in order to reach these results, the people must attend the exhibitions. Human tastes and aspirations are such,—and we must take these things as they are,—that anything of a purely elevating tendency, and which does not appeal in any way to our lower natures, does not attract the great masses of the people. The nonsense of a corps of negro minstrels draws fuller houses than the purest rendering of the productions of the great masters. A circus with the foolishness of a noted clown will be crowded while art galleries are empty. A stump speaker who can tell a commonplace story in an off-hand, attractive manner, will chain an audience when the greatest scholarship and highest culture will simply empty the seats. So an exhibition of fruits and flowers, charming in its beauty and variety, will have few visitors, while a horse-trot will draw together its shouting thousands. Yet an exhibition cannot be run without receipts, and exerts but little influence without visitors.

We have held four exhibitions—two connected with the State Agricultural Society, and two independent and alone. In both of the cases where we have run alone we have been disappointed in the attendance. Holding independent exhibitions is strictly in accordance with the desires of its officers and with the character of our efforts. If they cannot however be made to pay running expenses, then a question of serious importance presents itself. In locating our exhibitions we find we can hardly go into any locality without getting in contact with a local Society. Every county in the State has its agricultural fair, and some several of them, so that turning our attention wheresoever we may, we in a measure interfere with these local exhibitions.

To avoid any actual or supposed injurious interference with the attendance upon the North Kennebec Fair at Waterville, last

autumn,—since our exhibition must be held near the usual time of autumn fairs,—we arranged to hold it independent but concurrently with the local fair. In this, as in all previous cases, no difficulties arose with the officers and managers in carrying out the agreements entered into; yet the people sometimes gain erroneous ideas as to the arrangements, which lead to disappointments. This was the case to some extent at Waterville. It may as well then, in view of past experience, become the settled policy of the Society to hold its exhibitions distinct in time as well as in arrangements from all local exhibitions. This is a subject which may well claim the attention of members at this meeting. It is believed that the life of the Society and its usefulness require an annual exhibition. How shall it be conducted, and how maintained, are questions of interest to all.

A thought here presents itself in connection with our fruit exhibitions, which has before been presented to your consideration, and the importance of which is such that it should be annually repeated till it commands more attention than it has yet received. I allude to the work of the standing committees on nomenclature and new fruits. Such committees, if faithful to their duties, may do a vast amount of much needed work, and their reports would be an important and valuable addition to our annual volume.

Meetings for a mutual interchange of ideas and experiences are most effectual educators. This Society early conceived the idea of employing this means of carrying on its work. There is no question but the many meetings held among farmers for the consideration of special subjects in which they are interested, are the means of diffusing a vast amount of information and in a great degree contribute to the progress now being made in the various branches of agriculture. To no class can such meetings be more directly influential than to the fruit grower. But in order to reach those whom we are trying to benefit we must go where the people are. If the Board of Agriculture would discuss general farming, it must go among the farmers. If the Dairymen's Association would discuss dairying, it must go among the dairymen. So if we would discuss fruit growing, we must go among the fruit growers. The fruit growers do not live in the city, so we must hold our meetings in the country, where the fruit growers are. There the meetings will prove most useful and most successful—for there we shall draw together those who are engaged in growing fruit. These meetings should, as far as possible, partake of the

character of institutes for imparting pomological knowledge to those who avail themselves of the opportunity to be present. By this we do not mean that those who conduct the meetings are professors of pomology and come here prepared to teach it in all its branches. We come here for the purpose of interchanging ideas; and while we act our part as best we are able, we expect to draw information from the experience of those who are present, and send it out to those who are searching for knowledge in the direction in which we are working. Thus you become the teachers, and we are only the medium through which the knowledge you possess is imparted to others. Much good may go out from such a meeting as this, and it is hoped the attendance at this time will be such as to give a high character to the deliberations.

We occasionally find an individual so void of everything but selfishness—so hedged up in his own narrow limits, that he can see no good results growing out of efforts made to encourage progress in any direction. Should such an individual ask what we have done, we can only cite him to our records. Our annual reports are a record of the work of the Society. We make no claims for brilliant achievements. We are planting the tree of knowledge in the faith that in due time it will bring forth fruit.

Our fruit list is a safe guide for those seeking information in regard to the most desirable varieties to plant. It contains in an available form the experience of practical fruit growers. No variety is there recommended which has not proved worthy of recommendation. There may be new varieties of great value which are not entered in the list. When they have been proved worthy of it, by the test of experience, they will be inserted.

Arrangements have been made to have a list of fruits for amateur growers prepared and presented to this meeting for the approval of the Society. Gross mistakes have been made by those who would grow a few select varieties for use in their own families. With but a small tract of land to devote to a fruit garden, they have no room to waste on inferior varieties. Without experience to guide them, it is not strange that after years of watchful care many of them find their ground encumbered with such as they do not want. With a list prepared by those who are familiar with the different varieties of fruit, and carefully revised by the Society, those seeking information have a safe guide to follow.

Gentlemen, fellow-members, there is still much work which may be done. The Society, if its members are earnest and faithful,

will find that its work never can be completed. As it goes on increasing in strength and drawing to its ranks new members and new workers, the field of labor will continually open before it, inviting to effort. As we labor earnestly and faithfully, so shall be our reward.

The President's address was by vote referred to a special committee consisting of Messrs. Henry McLaughlin, Joseph Taylor and J. A. Varney.

DISCUSSION.

Dr. N. T. TRUE of Bethel. There are some forty minutes before nine o'clock, and in the absence of any other business I would be happy to hear from the members of the Society or from any gentleman present on the points suggested by the interesting address to which we have listened. There are certainly points worthy of further consideration, and I think there will be no better opportunity for considering them than the present.

The SECRETARY. I know of no one present better qualified to open the discussion than Dr. True, and I would call upon him to address the meeting.

Dr. TRUE. I presume I shall inflict all the punishment that the pomologists present are deserving of in this world, to-morrow, and I would prefer to be excused to-night. However, there are one or two points on which I would like to speak. The President has alluded to the first efforts made in this county in behalf of the agricultural interest. They are exceedingly interesting. Some of you may call to mind the name of Benjamin Vaughan, of Hallowell, an English gentleman who came to this country a good many years ago. He introduced many varieties of fruit, and some of them have been propagated, and in that way he did a good deal to improve the character of the fruit grown in that section. I came to this town to reside more than forty years ago. I was struck with the efforts that had already been made here in introducing the cultivation of some kinds of fruit. Those efforts were not always successful. Many of them were experiments, but experiments are not always unprofitable even when they fail in securing the direct end desired. I made my first home in the house which had been owned and occupied by Hon. John Chandler, known to many of you as our first Senator in Congress. He had

introduced trees, which were growing about his residence, that I did not suppose could be grown in Maine. I remember seeing my first Seckel pear in his dooryard, bearing good crops of excellent fruit at least every other year. It is a small pear to be sure, and not to be recommended perhaps as the best, but worthy to be cultivated. Then I remember of seeing what I never saw elsewhere in the State of Maine. He had introduced a catalpa tree, which, it had been supposed, would only live in the neighborhood of Charleston; but there was the tree by that house, with its great leaves. The snow would kill it to the roots about every winter, but the roots would survive. It was not suitable for culture of course, but it was an experiment and one which I honor him for making. Then he had planted a row of sycamore trees, and they had grown up to be quite large trees. He also raised apples. He had one variety that was always a favorite with me. That was the old English Nonsuch. I don't know that there is any apple that I prefer to it. It is not an apple perhaps that could be successfully propagated in all parts of the State, but from that place many barrels of them used to be sent away. His first efforts in raising grapes were not successful, perhaps because then we had not varieties adapted to the climate. These facts show the character of the experiments he made; and they had to make experiments in those days. It was the only way they could ascertain what was adapted to their wants. Since that day wonderful improvements in pomology have been introduced, and these early efforts are of great interest as matters of history.

There is another point to which I wish to call attention, and it was suggested to me by what has been said with reference to this town. I know something about it from my residence of ten years here, and I think that there are few portions of the State where they can raise such apples as can be raised in Monmouth. There are few if any places in the State where you can raise so good Black Oxfords as you can see on the tables here. The Greening cannot be grown, so far as my observation goes, as well as the Roxbury Russet. The production of the latter fruit has always been a characteristic of this town. I have seen long rows of these trees here laden with the richest fruit. Now I have some trees of the same variety at Bethel, and I wish that somebody would come some night and cut them down. They bear a disagreeable fruit that cracks and is unfit for consumption. I have let them grow in the hope that they would do better.

GRAPE CULTURE.

Dr. TRUE proceeded :—Allusion has been made to the Blood's Seedling grape. Well, sir, I have eaten very good grapes of that variety grown in this town, and would be glad always to have as good grapes as these were, and none worse. In another place it might not be good. I think it is one of those grapes that is various in its quality. What I want to come at is, that every person who owns a little lot of land might have one, two or three grape vines growing up by the side of his house where the morning sun can come in and where they can be protected from the first frosts and high winds. My experience has been that if we can get them past the first frosts we can ripen grapes and have them good. I believe that every person can raise at least one grape vine. It is something that is useful, as well as beautiful, running up by the side of a house. The experiments have been tried. I can remember when we had not a grape that we could rely upon as adapted to out-door culture in Maine. Now we have some four of five, perhaps more, varieties. I will mention three or four while I think of it. The Hartford Prolific is a good grape and a rapid grower. The Delaware is a slower grower, but when under way it produces good fruit. Then there is another, the Northern Muscadine. I am always glad to get a good supply of these grapes well ripened. There is one other variety to which I wish to call the attention of the Society. I do not know whether it is known in this State, but it is a seedling which originated in Oswego, N. Y., known as the Worden grape. Gentlemen who have tried all the varieties they can raise there, are propagating this in preference to others. It ripens there earlier than others. I think it ripens earlier than the Hartford Prolific. I would like to bring this matter to the attention of the gentlemen present who are familiar with these things. Perhaps Dr. Weston, who watches all these matters, has fruited it and can tell us about it.

Dr. WESTON. I have had no experience with the Worden grape. I have read about it, but I am not aware that it has been introduced into the State.

Mr. SAWYER being called upon, responded :—I did not intend to say anything to-night. I have, it is true, grown some grapes,—in fact, most all the kinds that are commonly grown in this State,—and have ripened almost all of them under some circumstances—some more frequently than others. In regard to the Worden

grape, I think it is not grown in this State except to a very limited extent. I am quite sure that Mr. Goodale has introduced it and is growing it on his grounds in Saco, but I do not understand that he has the vines for sale. I have not seen it myself, but it is well spoken of.* I am obliged to say that one or two of the grapes that our friend Dr. True has spoken of do not please me. I believe that we have better grapes than the Hartford Prolific or the Northern Muscadine, and which we can grow as well as these. The Delaware of course cannot be objected to. The fact of its slow growing should not be a serious objection, for it will grow if you will give it a good chance, and the fruit will be satisfactory. It bears an abundance of clusters, and the size of the berries may be increased by judicious thinning, as with other grapes. We have many good grapes in the State for which the season is not quite long enough, and they will not ripen. We can sometimes ripen the Catawba and Sweetwater. We can ripen the Isabella about once in six years; I think not oftener. You remember that at our first annual exhibition, at Bangor, we had grapes from Piscataquis county. Mr. Calvin Chamberlain, a gentleman well known for his interest in fruit growing, sent us grapes grown in the open air on his grounds in Foxcroft. I do not remember of tasting them, but they had the appearance of being well ripened, and yet there were many sections where grapes did not fully ripen that year. There is a class of grapes grown quite extensively in our State—the Rogers' Hybrids,—produced by crossing some of our native varieties with European varieties. Mr. Rogers produced a large number of these hybrids, and the same thing has

* In answer to inquiries, Mr. GOODALE writes, under date of Feb. 19, 1877:—"I have grown the Worden grape for ten years and more. Its wood and leaf resemble the Concord, but the vine is less vigorous, and of rather slender growth. The fruit also resembles the Concord,—the berries rather larger, bunch hardly as compact. In some years it has (in common with Concord and some others,) suffered from a disease attacking the berries, which has lessened the crop. It inclines to over-bear, but when properly thinned it is not only much earlier than Concord but in quality is superior to that, even at its best—(and the Concord rarely ripens *fully* here.) Except for the two drawbacks above named I would rank it, for culture in Maine, a long way ahead of any other yet proved on my grounds; and with them I would part with any other quite as soon. I have no vines for sale."

Mr. JOHN CURRIER of Waldoboro', writes:—"I fruited it year before last, and did not notice that it differed much from other good grapes that I have, but last year it yielded a large crop and we called it decidedly the best grape that we had. The berries are of good size, also the bunches, though not large. I have vines for sale."

I also learn that it has been grown by some other members of the Society, and it is hoped we may have it at the next exhibition —SEC.

been done by others. He at first designated them by numbers, but afterwards gave names to the best. His No. 3 is the Massasoit; No. 4 is the Wilder; No. 9 is the Lindley; No. 15 is the Agawam; No. 19 is the Merrimack. The Salem, (No. 22), is probably the most widely known of that class of grapes. All of these, except the first named, are described and recommended in our fruit list. I have found that these grapes, in my locality, ripen nearly every year. There is a large class of grapes that will grow and may be ripened almost every year, and this is a field in which the Society can do a good work. Our exhibitions have already done much in the improvement of the taste and knowledge of the people who have attended them. Very much depends in growing grapes upon the removal of a portion of the fruit, and this is a principle which, so far as I know, holds good in regard to all fruits. A very little protection will enable us to ripen the best grapes; as the Iona, which never ripens fully without it, requires but a slight protection to carry it past the early frosts; and when well ripened I know no better grape. So as to the Diana, which is the best keeping variety I know of. The Rebecca is a fine grape, but I have found the vines tender and unreliable in the open air. Allen's Hybrid is a very delicious grape, which I think will do better with some artificial protection, although it is grown at Bangor and elsewhere, in sheltered positions, quite successfully. I make a distinction between *shelter*, which all varieties require in our climate and which may be afforded by buildings, fences, trees, &c., and *artificial protection*, by which I mean a covering, either permanent or temporary, of glass, cloth or other material, to prevent the effects of late spring and early autumn frosts and of damp foggy weather in summer. This is a subject to which I hope to call the attention of the Society more particularly at some future time. We ought also to give attention to the peculiarities of soils and culture required by different varieties. I would caution every one against buying untested varieties. Attractive pictures and the representations of itinerant venders will generally mislead the novice who trusts in them.

APPLES FOR MARKET.—HIGH CULTURE FOR APPLES.

Mr. A. C. CARR of Winthrop, being called upon by the President, said:—I did not expect to be called upon to-night, especially after hearing the gentleman from Bethel and the gentleman from

Wiscasset. The apple alluded to by Dr. True as the English Nonsuch, I suppose is the Canada Red Nonsuch, (Red Canada.) I think it may be profitably grown in this county. It is rather small, but is of good flavor. Speaking of the Roxbury Russet, we do claim, and I think rightfully, that this section of the State is *the* section to grow the Roxbury Russet. I have bought a few apples and handled some, [Probably more than any other person in the State.—Sec.] and so near here as in the neighboring town of Greene I don't believe anybody ever saw put up a good barrel of Roxbury Russets, but for Baldwins they can't be beat. On the east of the Kennebec, too, it is hard work, generally speaking, to raise good Roxbury Russets, but here we raise what we call good ones. They are very good for shipping. Right here I may say that it seems to me that we ought to raise the apple that will fill and satisfy the market. Of course we want to raise various kinds for our own use, and perhaps we ought to raise a few more kinds than we want for the market. We want to raise but few kinds for market. A gentleman said to me that the market calls for five barrels of Baldwins to one of every other kind. I think it is so. So the Baldwin is really the apple to grow for money. I think the Baldwin and the Roxbury Russet are the most profitable apples for us to raise. I had good success with my trees last year. I didn't allow the caterpillars to eat them up, and I got fifty or sixty barrels where my neighbors had none; and I expect some next year.

Mr. ALFRED SMITH of Monmouth. Allusion has been made to the Roxbury Russet. I have a few of them. I am considerable of an old man, and I have raised that fruit from my boyhood. It seems to be the prevalent opinion that it cannot be raised anywhere but in Monmouth. I have come to a different conclusion, but I may be mistaken. It needs high culture anywhere, and with that you get good fruit yearly. Without it you cannot expect it to succeed anywhere. As to the Baldwin, it will not bear high culture on low lands. On our high lands it does well, but it will winter-kill if driven hard. I have nothing against the fruit, but I have lost more money in undertaking to raise it than with any other kind. As for the Russets, in Winthrop I had an orchard of four acres. The outside rows were well manured naturally, from the fact that the sheep used to lie under them. These trees produced beautiful "golden" Russets,—as the neighbors called them,—while those in the centre of the orchard bore very inferior

apples, so much so that they were worthless. They were Russets, but the neighbors said a different fruit from the "golden" Russets that grew on the outside. In fact they were the same, but so small that anybody would be ashamed of them. On one row where the sheep were in the habit of lying, I raised forty bushels from nine trees,—as handsome apples as you ever saw, while the inferior ones were not fit for market—on the same soil. Now any one can see it was culture that made the difference. The Russets in my orchard in this town, when I came here, were so mean that I was ashamed of them. I sent them to Boston and they passed for No. 2's. I have since raised from those trees as good apples as ever I raised in Winthrop. *High culture has done it.* Last fall, at our exhibition, I saw some handsome Boxbury Russets from Waterville, and from Mr. Pulsifer's orchard in Androscoggin county,—as handsome specimens as we raise in Monmouth. Right here, on a soil different from mine, Mr. George H. Andrews raises them. You can see his fruit here, as handsome as you ever saw for Russets. *It is in the culture.* Many soils must be underdrained in order to produce good fruit, but we must *always* feed in order to produce fruit. Without it the fruit is mean. The Baldwin is a very slow grower. It will produce fruit for awhile, but it will run down to a small amount without high culture.

The PRESIDENT. This discussion has finally brought up a very important question, and one on which too much stress cannot be laid; that is, *thorough cultivation for the production of fruit.* There is no more important question in connection with the subject of fruit growing. There is no question on which fruit-growers need more prompting, unless a fruit-buyer, like Mr. Carr, might say it is the subject of *deaconing*. I am admonished, however, that we cannot pursue it to any great extent at this time. If there shall be an opportunity, it may be discussed further before the close of the meeting.

The President then announced that any questions arising in the minds of persons present, on subjects connected with fruit growing, and which might be presented in writing, would be answered or presented to the Society for consideration before the close of the meeting on Wednesday; after which,

Adjourned.

SECOND DAY.—MORNING SESSION.

The business meeting of the Society was adjourned till five o'clock P. M.

At the opening of the public session the President announced the order of exercises for the day, and introduced Dr. J. C. Weston of Bangor, Corresponding Secretary, who presented his annual report, embracing interesting and instructive papers on "Lawns and Landscape Gardening" and "Window Gardening."

REPORT OF THE CORRESPONDING SECRETARY, FOR 1876.

DR. J. C. WESTON OF BANGOR.

Your Corresponding Secretary would announce that copies of the Annual Report of the Maine State Pomological Society for 1875, were sent by the Recording Secretary to kindred associations so far as it was possible to ascertain the address of the officers of such societies, and there have been received by him in return and from other sources, the following works which have not been heretofore acknowledged,—all of which have been added to the Society's library, viz :

AMERICAN POMOLOGICAL SOCIETY. Proceedings of the fifteenth session held at Chicago, Ill., September, 1875. (Presented by G. B. Sawyer.)

DEPARTMENT OF AGRICULTURE OF THE UNITED STATES. Annual Report for 1875, and Monthly Reports for 1876. Also List of Agricultural Societies and Farmers' Clubs in the United States, (pamphlet.)

MAINE. Report of the Secretary of the Board of Agriculture for 1875; also General Index to Agricultural Reports of Maine from 1850 to 1875.

MASSACHUSETTS. Transactions Mass. Horticultural Society for 1875, Parts 1 and 2, and 1876, Part 1. Also Schedule of Prizes for 1877.

CONNECTICUT. Seventh and Eighth Annual Reports of the Secretary of the Board of Agriculture, being for the years 1873 and 1874, and each containing reports on orcharding and fruit culture contributed by Mr. P. M. Augur, Pomologist of the Board.

NEW YORK. Proceedings of the Western New York Horticultural Society, 1876.

PENNSYLVANIA. Programme of the Pennsylvania Horticultural Society for 1876. This is an old, wealthy and well organized society, and like the Western New York Society includes among its members many well known horticulturists and nurserymen. It is to be regretted that it does not publish its transactions in full.

GEORGIA. Proceedings of the Georgia State Horticultural Society, at its first session, held at Macon, August, 1876. This is a new Society, organized during the past year, under the most favorable auspices. We tender to it our fraternal greetings.

MICHIGAN. From Prof. Charles W. Garfield, of the State Agricultural College at Lausang, and recently elected Secretary of the State Pomological Society, we have the Transactions of the Michigan State Pomological Society for 1874 and 1875, (all the preceding volumes having been previously received and acknowledged); Transactions of the State Board of Agriculture, 1865 to 1875 inclusive, except 1867 and 1869, and the Report of the Superintendent of Public Instruction for 1874,—forming a most valuable accession to our library, and for which we return the thanks of this Society. The Pomological and Agricultural Reports of Michigan are magnificent volumes of upwards of 500 pages each, finely printed, profusely illustrated and well bound, and published by authority of the State. The liberality with which the Michigan State Pomological Society has been patronized by the State government, together with the zeal of its members, has resulted in a wonderful development of the fruit producing capacity of the State, and justly entitled her to the distinction accorded by Mr. Bateham, the able Secretary of the Ohio Horticultural Society, as “the banner apple State.” These results ought to serve as a salutary lesson to other States.

WISCONSIN. Transactions of the Wisconsin State Horticultural Society for 1875 and 1876. From F. W. Case, Secretary, Madison.

MINNESOTA. Transactions of the Minnesota State Horticultural Society for 1875, and the same for 1875-6. From Prof. C. Y. Lacy, Secretary, Minneapolis.

The two societies last named are composed of efficient and enthusiastic members, and are doing good work. They also receive liberal aid from the State governments. The reports are issued in good style and contain much useful information,—fully up to the current standard of such publications.

ONTARIO. Report of the Commissioner of Agriculture of the

Province of Ontario, embracing the Reports of the Fruit Growers' Association and of the Entomological Society of the Province for 1873.

Reports of the Fruit Growers' Association and Entomological Society for 1874, and the same for 1875. From D. W. Beadle, Secretary, St. Catherines.

These societies are efficient and well sustained, and their proceedings will afford us many valuable suggestions. We notice that the Fruit Growers' Association distributes annually among its members, trees, vines or plants of some variety regarded as desirable, announcing the same for some years in advance.

QUEBEC. First Report of the Fruit Committee of the Montreal Agricultural and Horticultural Society, and Fruit List of the Province of Quebec. From Mr. Charles Gibb, Abbotsford. These publications indicate a good beginning and well considered efforts in the right direction among our northern neighbors, and we hail them with much pleasure.

We have in former years received and acknowledged reports from the State Societies of Ohio, Pennsylvania (Fruit Growers' Association) Florida and Nebraska, but none during the past year. We trust we shall be remembered by all of them in the future.

Our Secretary has recently obtained from the list published by the Department of Agriculture at Washington, and from other sources, reliable information in respect to societies of a similar character in several of the other States, and will communicate with them at an early day for the purpose of effecting an exchange of publications.

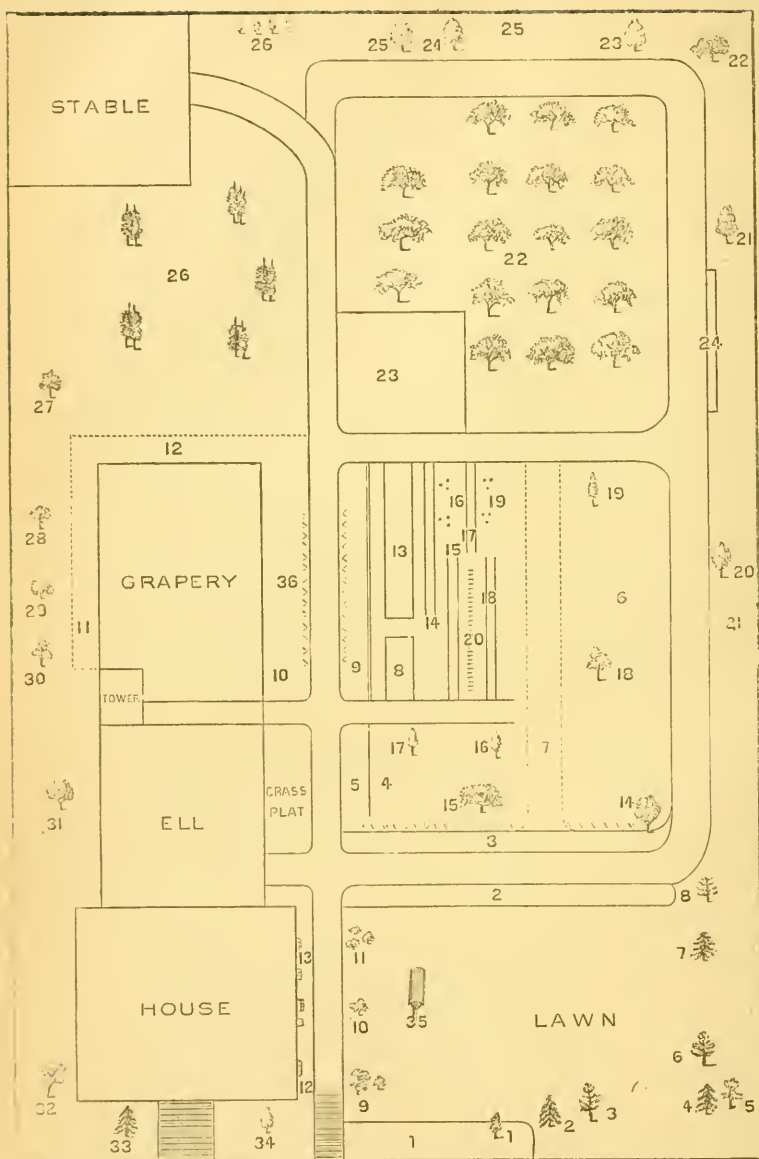
We have also received the following works from individuals, viz: From CHARLES DOWNING, Newburgh, N. Y., Second Appendix to Downing's Fruits and Fruit Trees of America.

Col. D. S. CURTISS, Editor, Baltimore, Md., The Maryland Farmer, monthly, vol. 13, 1876. Published by E. Whitman, Baltimore.

THOMAS MEEHAN, editor and publisher, Philadelphia,—occasional number of The Gardener's Monthly.

JAMES VICK, Rochester, N. Y. Vick's Floral Guide for 1876 and 1877.

Also numerous catalogues from nurserymen, seedsmen, &c.



PLAN OF GROUNDS OF THE LATE DR. J. C. WESTON, BANGOR.

REFERENCES.

TREES, SHRUBS AND VINES.

- No. 1. Tree Honeysuckle.
2. Spruce
3. Pine.
4. Spruce.
5. White Birch.
6. Scotch Pine.
7. Spruce.
8. Pine.
9. Group—Barbery, Peony, Weigelia
10. Weigelia.
11. *Pyrus Japonica*, Moss Rose.
12. Roxbury Wax Work.
13. Grapes—Salem, Delaware.
14. Plum.
15. Apple—Bell's Early.
16. Pear.
17. Pear.
18. Plum.
19. Pear.
20. Cherry.
21. Cherry.
22. Apple.
23. Plum.
24. Cherry.
25. Cherry.
26. Hops.
27. Cherry.
28. Lilac—purple.
29. Snow-Ball.
30. White Lilac.
31. Cherry.
32. Mountain Ash.
33. Norway Spruce.

34. Wild Pear.
35. Trellis, with Clematis.
36. Delaware Grapes, on poles.

BEDS.

- No. 1. Lily of the Valley.
2. Flower border for annuals and bedding out plants.
3. Flower border for perennials, etc.
4. Vegetables with a row of dahlias bordering flower beds.
5. Rose bed.
6. Vegetables.
7. A double row of bean poles set close.
8. A flower bed.
9. Rose bed, tulips on edge near path.
10. Grape border, tulips on the edge near path.
11. Grape border.
12. Grape border.
13. Asparagus.
14. Pear nursery.
- 15, 17, 18. Pears.
- 16, 19. Cucumbers.
20. Celery.
21. Raspberries.
22. Strawberries, set with pear trees.
23. Vegetables.
24. Rhubarb.
25. Corn.
26. Corn set with pears.

LAWNS AND LANDSCAPE GARDENING.

[Continuation of Dr. Weston's report as Corresponding Secretary.]

England surpasses all other countries in the beauty of its lawns. The humidity of its climate, the frequent rains in the season of growing vegetation, cause the grass to flourish with great luxuriance, and the frequent cutting produces a velvet like turf of vivid green, which is a constant delight to the eye. There is nothing so attractive in all nature's domain as this soft carpet, with the most beautiful flowers in a setting of emerald. And no one can contemplate the lawns on the grounds of Oxford and Cambridge and hundreds of other localities, without admiration and a desire to imitate them.

Although our own country has a more fervid heat and a drier atmosphere, yet experience has shown that we also can cultivate lawns which may be very satisfactory. Every humble home may even have its patch of green grass of greater or less extent, according to the means of the owner, which may be enjoyed as keenly as the largest landscape garden belonging to the wealthiest landholder. "It is a mistaken idea, indulged in by many, that to make a home place beautiful, requires a large expenditure of money; and it is still more a mistaken idea that to accomplish this successfully, a person must be acquainted with the rules and principles of landscape gardening in all the minutiae of its details, or if they lack this knowledge themselves they must, perforce, employ some person learned and skilled in the intricacies of the art, to do it for them. These ideas have no doubt deterred many from undertaking what they have long desired, a home beautiful in its surroundings and adornments. Taste and purpose, combined with study and observation, will produce the desired result, often much more satisfactorily than a lavish expenditure of money."

As the lawn is one of the most important features in landscape gardening, it will first be considered; and as knowledge derived from experience and example is apt to be most practical and useful, I will communicate my own method.

The very first thing needed in preparing the ground is to provide effectual drainage by stone, tile or brick drains, unless the land is so situated that this is accomplished without extra artificial means. In premises consisting of three-fourths of an acre, the

garden is from six to ten feet above the streets that bound it on three sides, and the surface slopes from the centre towards the west and towards the east, and a terrace on the margin extends to the sidewalk, so that the surface and the surplus water of the soil readily flows off, and all the waste water from the house and that from the house of a neighbor seventy-five feet distant, is conveyed away through brick drains from the cellars, hence no additional drainage of the lot is required. If it had been level or wet it would have been necessary to lay an underground drain through the centre. Thus a dry soil is secured at all seasons of the year, and a healthy uniform growth of plants and trees. It is equally important to make the soil deep, rich and mellow, so that the roots of the grass may descend easily in pursuit of the necessary moisture and nutriment, and from their distance below the surface, may thus escape the bad effects of the drouths and heat of summer. In this way only can a fine, handsome, close turf be obtained, which shall flourish in perennial verdure, maintaining its vigor season after season, with little additional treatment.

It having been determined to convert a plat of ground fifty feet by sixty into a lawn, all the plants, shrubs and trees which were not required for ornament were removed the last of September. The surface was covered with a plentiful supply of old, well composted manure, and the ground was spaded two feet deep, taking care to distribute this manure evenly with the soil, so that green spots and patches may not disfigure the lawn. If this work is done in early autumn, the seeds of the weeds contained in the fertilizing material will be apt to germinate, and before reaching maturity these weeds will be destroyed by the frosts of winter, and consequently the next season the grass will be less infested by undesirable plants.

Early in the spring as soon as the soil is free from frost, and friable, the ground was graded, raked and thoroughly rolled so as to be smooth and compact. It was then raked again and English lawn grass with a small quantity of white clover was sown on a calm day, evenly and thickly so as to cover the entire surface, and then rolled again when the work was complete. If this sowing is done before the early vernal rains, the seed is sure to come up quickly and evenly, and become well rooted and vigorous before the soil is dry, and this germination is also promoted by the additional rolling. The seed ought to be used at the rate of at least four bushels to the acre so as to ensure a close, firm turf.

Some may prefer American grass seed. James Cruikshanks of Massachusetts, after long experience with various mixtures, finds the following to give the best satisfaction: "Eight quarts of red top, two quarts of fine top, three quarts of Rhode Island bent, and three quarts of Kentucky blue, adding half a pound of white clover. These grasses when kept short will soon make a fine lawn, which is one of the best components of a good landscape. Some soils require more seed than others, but the proportion will be the same whatever the quantity required."

When the grass is a few inches high and is strongly rooted, it should be mown just before an expected rain, and spread evenly over the surface for a mulch, which is to be removed in a few days, or as soon as the grass starts vigorously again, and this process is repeated during the season until autumn, as often as the growth seems to require it. In September wood ashes were scattered upon the ground in season to be conveyed into the soil by the autumnal rains and stimulate the growth of a thick aftermath, which affords protection to the roots from the frosts of winter. A fine compost of manure would be equally effectual. The second season the lawn ought to be mown every ten days, or often enough to keep it short, close and green.

The arrangement of the walks is an important matter. No more should be made than are necessary, as too many paths divide the lawn too much, especially if small, and mar its beauty. Their location and direction should conform to ideas of utility and beauty. If circumstances allow, a curved path or road is much more beautiful, particularly if a tree or a group, or the conformation of the ground seem to require the circular walk.

In the premises under consideration, the house is twenty feet east from the street, and convenience requires that it should be entered by ascending stone steps directly to the front door. If it were situated further in the rear and in the centre of the lot, and was less elevated, the approach would be much more effective and in accordance with the rules of landscape gardening, if a carriage road entered at one corner and gracefully sweeping round in front of the door departed at the other corner, with a group of trees in the centre of the lawn in front and single trees interspersed at suitable distances along the road, so disposed as not to intercept desirable views. Another series of steps ascend to a straight granite walk, which passes to the other doors in the southern end and ell of the house, facing the lawn. Lawns about twenty feet

wide extend in front and at the northern end of the house, ell and span-roof grapery.

Such being the position of the house, and such the nature of the existing walks, the additional paths have to conform; and it was necessary also to plant the trees, shrubs, climbing vines and flowering plants so as not to be incongruous, but to harmonize with the existing order of things. Accordingly a straight path was made from the door in the ell, along the eastern margin of the lawn until it approached a large Scotch pine, when it was necessary to curve it so as to meet another path extending to the vegetable garden; and along this path were made borders for shrubs and flowers, rather than disfigure the beauty of the small lawn by introducing through it beds of flowering plants.

In the border next the lawn were planted low annuals, perennials and bulbous plants, such as pansies, pinks, mignonette, sweet alysum, verbenas, nemophila, agrostemma, Drummond phlox, tulips, lilies, graceful dentzia, mountain mist, &c. In the other, next the vegetable garden, were planted taller shrubs and plants, such as Mahonia, flowering almond, rose acacia, peonies, dahlias, gladiolas, asters, &c. Beyond, rose bushes, climbing vines, morning glories, nasturtiums, scarlet and white runners and asparagus, afford a further screen to the vegetable garden in the rear of the lot. The trees also are so disposed as to conceal it and afford that privacy which is desirable. The necessary paths in the rest of the garden, whenever convenient and practicable, curve so as to avoid sharp corners.

In a corner of the lawn most remote from the house is a group of trees, consisting of a Norway spruce in the background, and in front a white birch and a scarlet maple, the lighter green of the deciduous trees contrasting well with the darker foliage of the evergreen. Elsewhere are two other spruces, an American white (*Pinus Strobus*), Scotch (*Pinus Sylvestris*), and Austrian pine (*Pinus Austriaca*),—attractive when only three feet high, and set sufficiently far apart to grow and develop in all their symmetry and beauty until they attain their natural size. They, with the rock maples and elms planted in the border of the street, also afford shelter from the westerly winds. The buildings give additional shelter to the garden, and obviate the necessity for a Norway spruce hedge on the north.

On the western margin is a hemlock hedge (*Abies Canadensis*), kept close shaved and low, which, with its peculiar green is an

object of beauty, particularly when the new buds push forth, and the adjoining terrace is clothed with lilies of the valley, which first greet the opening spring with their broad green leaves, and fragrant flowers. These are separated from the turf by a plank inserted in the ground edgewise just below the surface. On the southern border is a long hedge of arbor vitæ, disclosing its ever-green verdure all winter above the line of snow.

In the lawn are interspersed at suitable distances, so as not to interfere with the children's play-ground, flowering shrubs, such as rosea and variegated Weigelia, *Pyrus Japonica*, crested moss rose, &c., and in the centre opposite the garden hood is a latticed arbor upon which flowering vines climb and cling with their entwining tendrils, so that when covered it is veritably a thing of great beauty.

In the old lawn, in front and on the northern exposure, were planted the sugar pear, or shad-bush, (*Amelanchier Canadensis*), Scotch larch, European ash, cherry trees, snow ball, white and purple lilacs. The trees have attained large size and are perfectly hardy. The sugar pear is the first tree to blossom in the spring, and its abundant white flowers, like an immense bouquet, inspires the mind with sensations of delight, giving promise of the coming efflorescence and fruit of other trees; and the scarlet blossoms of the *Pyrus Japonica* next succeed and retain their vivid color for weeks.

The walls of the house are relieved by the clematis, woodbine, Roxbury waxwork and grape vines, growing with perennial verdure and luxuriance from spring to autumn, and cheering the cultivator at the ripening harvest with crimson foliage, scarlet berry, yellow, red and purple cluster.

Other trees and shrubs besides those mentioned had been tried and either had been discarded or had died. The locust, which in its long sprays of foliage resembles the acacia, is attractive, but its very luxuriance and the rapidity of its growth so affect its wood, that it readily splits under the influence of the wind, and loses its symmetry. The mountain ash or round wood, (*Pyrus Americana*) is very handsome with its smooth bark and clean limbs, but easily falls a victim to the borer. Only the frequent application of strong soap suds to the bark during summer, will save it. The European ash is more vigorous and hardy, and is an ornament, particularly in the fall, when covered with clusters of red berries. Many trees which flourish in a more southern clime, will not sur-

vive the rigorous winters of Maine, but we can secure a sufficient variety. The same is true of certain shrubs in northern Maine. The rhododendron, so exquisite in its foliage and flowers on the lawn, is tender. It has been more than once transplanted from its native bed near Sebago lake, but missed the protection of the trees and the peculiar soil from which it had been removed, and only survived one or two winters. Still some variety may succeed if well covered with evergreen boughs and the winter snows, or it may be planted in a tub, which may be removed to the house for shelter.

The roses which have proved hardy and satisfactory are the Gen. Jacqueminot, Giant of Battles, Baron Prevost, Edward de Fosse, La Reine, Lanne and Crested moss, and the Thurette, the common white, blush and Harrison roses which bloom but once, yet are valuable for their hardiness and profuse efflorescence. In our rigorous climate it is important to fasten them to the earth before the ground freezes, and cover them with evergreen boughs which should not be removed until the buds are ready to push in the spring, and the extra bloom will well repay the trouble. These hardy trees and shrubs are sufficiently numerous for the grounds of most estates.

As shown in this paper, the rules of landscape gardening which were practicable, have been applied to a garden limited in extent. Different grounds might require somewhat different treatment, according to circumstances. A suburban or country home would furnish a larger arena for the display of taste and skill.

It may be well to add a few simple directions in respect to the construction of garden walks: Dig out the soil the width of the proposed path, at least two and a half feet deep. At the bottom lay a foundation of large stones closely fitted together. A second layer of smaller stones should follow the first, and so on, each succeeding layer smaller than the preceding, until the space is nearly filled level with the surrounding surface, then cover with coarse cinders, and finish with gravel and sand, or coal ashes or finely broken stone. In this way walks and roads are made in parks both in Europe and this country, and thus a permanent and perfectly well drained and dry walk, free from weeds, is secured at all seasons.

For the instruction of those who desire to adorn and render attractive suburban estates, the following essay on Landscape Gardening, by James Cruikshanks, is copied :

* "The principles upon which Landscape Gardening is founded are intended to produce unity of design with harmony in execution and also picturesque beauty, and where these are not combined the grand object in view is not attained.

It is necessary to consider the location of the house, with all its surroundings, the size of the place, also the views to be obtained from it, whether they are distant or circumscribed, of wood or water, tame or romantic, of mountain or meadow, of sea or land.

An estate commanding such views requires very different treatment in the arrangement, from one where the house is embedded in a forest with only space enough to get a small lawn, and consequently without distant views. In forming the component parts of a good landscape, much also depends upon the character of the scenery in view, for if the sea can be seen on the one side, and a mountain on the other, the planting would require to be bolder and more decided than if the only views to be obtained were a meadow with its flocks and herds. * * *

The first thing that requires attention is to have the ground properly drained and subsoiled, and afterwards graded and enriched; also to have the places marked off for groups of trees which it is intended to plant. You will then be ready to sow the grass seed, and must be sure to procure the best mixture to produce a good lawn. * * *

It is difficult to give a design for any supposed place, as almost every one differs somewhat from its next neighbor; but assuming the ground to be nearly level, or slightly undulating, with a public road in front, and rather a sloping to the road than otherwise, placing the house about two-thirds of the depth of the property towards the back, will give a good opportunity to have the necessary buildings, such as the stables, carriage house, ice house, etc., behind the mansion where they can be shut out of view, if desired, by irregular groups of planting, which could lap over each other and thus secure privacy. This arrangement would afford space for a fine lawn in front, with small, irregular clumps of trees and flowering shrubs near the road, making the lawn look as large as possible and giving views of pleasant objects beyond.

The house being located as before stated, and say, about one-fourth of the width of the lot from either side, with an easy, curved avenue from the road, such an arrangement would give a good opportunity to get a small kitchen garden and orchard at the

back of the house, with a greenhouse and grapery running about parallel with the house, and a flower garden in front of them, flowering shrubs and low evergreens forming a boundary between the flower garden and the lawn. Anything that was unsightly would thus be kept out of view, and at the same time everything required could be conveniently located.

The flower garden being a distinct department, the best effect will be produced by cultivating in it principally florists' flowers. The beauty of a lawn is lost in a great measure by introducing clumps of bedding plants through it, however artistically they may be arranged; nothing pleases the eye so well as the pure, green grass with here and there a handsome ornamental tree judiciously located.

The buildings and drive being thus disposed of, the next thing requiring attention is the planting of the boundaries in such a manner as to afford sufficient shelter on the north and west sides, these being the quarters from which our heaviest gales come, but without giving it a too formal appearance, and at the same time taking advantage of all the most desirable views that can be obtained, and this can only be accomplished by judicious grouping.

The same may be said of the south and east sides, although they may not require to be so densely planted, unless it be to hide some unsightly object; but where the view of the sea, or the bold outline of a mountain can be obtained, the landscape gardener should be sure to take advantage of them. In planting, avoid straight rows, and let the outlines of groups be sinuously diversified, taking care to arrange the trees and shrubs according to their size and color, keeping the tallest at the back and the lightest shades of foliage on the most salient points. Small groups of ornamental trees and shrubs may be judiciously planted through the most distant parts of the lawn, but generally, single trees are all that will be required on a small place."

Downing says, * "By Landscape Gardening we understand not only an imitation in the grounds of a country residence, of the agreeable forms of nature, but an *expressive, harmonious and refined imitation*. In Landscape Gardening, we should aim to separate the accidental and extraneous in nature and to preserve only the spirit or essence. As an art, it does not consist as some may suppose, in producing a counterfeit of nature, but in *idealizing* natural beauty in a lawn, park or garden."

* Treatise on Landscape Gardening.

* "Of the general principles applicable to small suburban estates, we shall first speak of *Adaptation*.

It not unfrequently happens that an estate comes into one's possession upon which certain undesirable features may be presented either by the dwelling, or by the grounds, or by both, with which it is impracticable, or at least not desirable to interfere. The only course to be pursued in such a case, is to make the best of existing circumstances; and it is in this adaptation of means to ends that the executive abilities of the man of taste and good judgment are best exhibited, tending often to the production of the very best results.

Congruity is one of the most important principles to be kept in view in the arrangement of the smallest estate, and is one that is more frequently violated among us than almost any other. For example, it is not uncommon in looking from the house, to see upon one side of the estate, plantations of trees and shrubs arranged in natural order, and on the opposite side, a straight avenue flanked in a formal manner. Here is an evident incongruity. Again, the introduction of fruit trees among those which are strictly ornamental, especially upon a lawn, strikes the eye of taste unpleasantly; so also does the presence of vegetables among the garden flowers.

The disposal of architectural ornaments in a style different from the main house, immediately about and attached to it, as for example, those of a rustic character, are instances of the want of congruity. On the same principle, the attaching of a common greenhouse to a dwelling of any pretence to architectural style cannot be admissible.

In the arrangement of an estate, there should be one expression or leading feature to which the others should be subordinate. This principle termed *unity*, should be recognized even more in small estates than in large ones, for the reason that its violation in the former is more striking and more quickly detected.

Unity, however, should not interfere with the proper introduction of *variety*, which should be shown in the plantations, in the walks, flower-beds, and in the various garden ornaments, as well as in the vistas, recesses, pieces of water, etc."

† "Variety must be considered as belonging more to the details than to the production of a whole. By producing intricacy, it

* Extract from Essay by Daniel Dennison Slade. Trans. Mass. Hort. Society, 1875; Part 2d, p. 38. † Downings Landscape Gardening.

creates in scenery a thousand points of interest, and elicits new beauties through different arrangements and combinations of forms and colors, lights and shades."

"Simplicity is an essential element in the laying out and embellishment of the small suburban estate. It is not inconsistent with the other principles of which we have spoken, nor is it incompatible with true elegance and refinement.

Convenience never should be sacrificed to ostentation and extravagance, as is too often the case. Perhaps this mistake is more frequently made in the disposition of walks and roads than in any other way. Mr. Mitchell tells us in very pleasing words what guides we should follow in this matter.

* "A walk," he says, "is first of all a convenience; whether leading from door to highway, or to the stable court, or through gardens, or to the wood, it is essentially, and most of all a convenience; and to despoil it of this quality by interposing circles or curves, which have no meaning or sufficient cause, is mere affectation. Not to say, however, that all paths should be straight; the farmer, whose home is at a considerable remove from the highway, and who drives his team thither, avoiding rock and tree and hillock, will give to his line of approach a grace that it would be hard to excel by counterfeit." * * *

The gardens, both flower and vegetable, should be of easy access, the stables and out-houses should be in sufficient proximity, and nothing which can contribute to comfort and convenience should be overlooked.

For the full enjoyment of even the smallest suburban estate there must be a degree of *seclusion*. Not to be able to work in one's garden, to meditate or walk therein, without being subjected to the gaze of neighbors or the passers-by, is a condition which is not agreeable to the refined mind. This seclusion need not be such as to entirely deprive one of vistas into the distant or adjacent country, which are important addenda to every place, and for which every provision should be made, but it should be sufficient to afford that sense of quietude and freedom from interruption so dear to every man, especially a professional one, after the cares and labors of the day.

This seclusion is to be obtained by a judicious disposition of plantations and hedges, and not by high walls and fences, unless in exceptional cases.

Having thus marked out the general principles which should govern in the laying out and embellishment of the small suburban estate, it remains for us to add that there are a vast number of places, which from the nature of circumstances do not admit the application of any principles beyond those which neatness and order afford. The cultivation of trees and shrubs, a well kept lawn, and a distribution of flowers constitute all that can be expected therein."

WINDOW GARDENING.

In the rigorous climate of Maine, the beautiful flowers lie dormant more than half the year, enclosed in their shroud-like buds, awaiting the annual resurrection when the moist warm breeze of spring shall breathe upon them and bid them burst their cerements and awake to renewed life; and so it happens, that during all that long period we are deprived of the sight of the exquisite flowers, unless we provide for them an artificial climate, where they may grow and bloom perpetually in spite of winter's cold and frost. This can be done by one who has a bay or any other window with a southern or eastern exposure. There can be cultivated the ivy training about the room, roses full of bloom, perfuming the air with sweet fragrance, geraniums, heliotropes, fuchias and calla, etc.

* "They will thrive alike in the conservatories of the rich, the cottage of the poor, or the workshop of the mechanic. But how few understand their culture; how few treat them as living beings that breathe, and are sensitive to the changes of their surroundings; the temperature too cold or too hot will affect their very life, the soil also may run to the two extremes, may be either overfed or starved; too much kindness is as fatal as too much neglect; constant care tells the whole story of successful plant culture, yet bestowed in such a manner as to be hardly realized, a little now and then with a constant eye to their wants, and you will find your window of plants a source of constant satisfaction.

Flowers are not to rejoice the vision of the rich alone, neither is a greenhouse necessary; not that you can grow all kinds of plants to perfection in the dry atmosphere of a room heated by a coal or wood stove, but there are enough plants which will thrive to answer every want, and the others can be added as your means permit.

But to grow plants to perfection, such as you would wish to

* Trans. Wisconsin State Hort. Society, 1872; p. 184.

show for specimen plants, is not the easiest thing in the world. It is necessary to secure *both bloom and healthy growth*. The one is sometimes obtained at the expense of the other.

Do not crowd your plants by trying to keep more than your room will accommodate. If you do, the effect will be similar to the growth of a timber thicket, each plant striving to surmount its fellow, and in a short time, long, lank plants with a tuft of foliage at the tip, will be your recompense. Remember, that a few well grown model plants will give you far more pleasure than a score of ill-shaped things. A similar effect will be produced if plants cannot have sufficient light. *Plenty of light* is indispensable, and to secure this, no situation is so good as a south window, but if this cannot be had, then choose one facing the east, it will do almost as well, receiving the full rays of the early morning sun. A few plants will succeed without much sunlight, but they are the exception.

Use due caution in the heat of the room, neither too great by day nor too near the frost mark at night. Thirty-eight or forty degrees at night, is as low as it is safe to venture. A good base burning coal stove is unobjectionable, though some have argued to the contrary, keeping a steadier, more even temperature than any other stove. There will not be gas enough escape to do the least injury, and a better temperature is maintained through the night than by any other means.

Clean culture is absolutely necessary. Dust, which is always filling the air, will rest upon the foliage, stopping up the pores of the plant, encouraging insects, and soon your plant becomes yellow and seared. The remedy is apparent. The mouths or breathing tubes must be kept open. This can only be accomplished by frequent washings. At least once a fortnight, oftener would be better, the plants should be set in a tub of warm water and thoroughly washed. This will check the depredations of insects and contribute to the growth and health of the plants. Watering is one of the most difficult parts to consider. No specific rule will apply to all. One like the rose, wants a moist soil, but not so wet as to be sodden, but what might be called a soil in good working order, while a fuchsia, or a calla can hardly get too much water, especially while in bloom. A good rule to follow is, water regularly; a little study will soon teach you as to the wants of those you have, then follow the teachings of experience, and your plants will become neither too dry nor too wet.

The soil should usually be good black loam from the garden, top soil from the woods or about decayed logs, or well decomposed turf, and a mixture of sand. To these add one part from an old hot-bed of thoroughly decomposed manure or from a manure compost.

The worst obstacles to success are the insects. A very dry atmosphere is favorable to the red spider; frequent syringing or washing is sure death. The mealy bug and scale can only be kept down by watching closely for them, and washing with warm soap suds, which is not agreeable to their tastes. The louse or aphid is readily killed by tobacco smoke. This is done in various ways, the most convenient of which is to place the plants under a barrel or box, and insert a dish of ignited coals on which tobacco has been sprinkled and letting it remain ten or fifteen minutes. A second application in a few days will effectually rid your plants of this pest.

The entire system of plant culture may be summed up briefly. Secure plenty of light, even temperature, cleanliness, regularity in watering and good drainage.

In the window of an enthusiastic lady amateur in Milwaukee in February, the ivy is growing vigorously in a single pot under or in the rear of the flower stand. The fuchsia has nearly one hundred blossoms and buds on it. The tea roses, heliotrope, geraniums and calla have given blossoms almost constantly, rendering the window an object of great attraction and pleasure during the long, cold winter months. My only injunction to all is, go and do likewise.

Every flower is your friend; it will require but little effort on your part to be the friend of every flower."

The PRESIDENT. I hardly need to say that I have been deeply interested in the paper presented by Dr. Weston, and especially so in his description of his own lawn and grounds; and as it is a well known fact that we can copy better than we can originate, it struck me that it might be well for the Society to invite him to furnish a plan of his premises for publication in our transactions, as a guide or hint to others. We are aware that this subject of lawns and ornamental planting has received considerable attention, even in our rural towns; and I therefore mention it in this connection.

Mr. JOSEPH TAYLOR of Belgrade. I have listened with great interest to the reading of Dr. Weston's paper, and I approve of the President's suggestion. Perhaps we are not all in a situation to copy it, but we might take hints from it that would be interesting and advantageous.

Dr. TRUE followed in the same strain, illustrating his remarks by reference to failures in ornamental planting which had come under his own observation.

The SECRETARY spoke of his personal observation of Dr. Weston's premises, and alluded to the necessity of diagrams and practical directions for the benefit of those persons who have not the time or means to make themselves skillful in the art of landscape gardening.

On motion of FRIEND TAYLOR,

Voted, That Dr. Weston be requested to furnish a plan and perspective view of his grounds and buildings for publication in the Transactions in connection with his report.

LIST OF APPLES FOR AMATEUR CULTIVATORS.

Mr. CHARLES S. POPE of Manchester, chairman of the committee appointed at the last Winter Meeting to prepare a list of fruits to be recommended for cultivation by amateurs, submitted a report embracing a list of apples for the purpose named, which report was accepted and partially considered, and is here presented as revised by the Committee under the instructions of the Society.

REPORT.

"In selecting this list we have proceeded on the supposition, that those who expect to raise fruit of good quality and fine flavor will be willing to give the trees a good situation and high cultivation. For while some varieties, like the Starkey and Hubbardston Nonsuch will do well with ordinary orchard culture, many of our best apples, as the Early Harvest, Pomme Royal, and Jewett's Fine Red, will prove almost worthless under such treatment.

In our selection we have discarded those apples of which large size and fine appearance were the only desirable qualities, and aimed to present those only whose good texture and fine flavor will well repay for the extra labor bestowed. It is impossible for us to recommend a list of apples that will succeed equally well in all localities, and while it is our aim to give those that will prove fine in most sections, it will still remain for the cultivator to ex-

periment to some extent, and discard such as he finds are not suited to his particular location.

Some of our best market apples are accepted as desirable for home use, but many of the varieties that should be in every amateur collection have some defect, either in size or bearing qualities, that make them unprofitable market fruits.

Early Harvest.—This apple, although rather acid, should have a place in every collection on account of its earliness,—ripening the first of August. Requires high cultivation, without which the fruit is liable to crack.

King Sweeting.—Rather small, but exceedingly sweet, tender and juicy. We do not know of any apple that will take its place. Season, last of August and first of September.

Primate.—Tree a strong, thrifty grower, and an abundant bearer. Flesh tender and flavor sprightly. Season, September.

American Summer Pearmain.—Tree a slow grower. Fruit of first quality. Very tender and exceedingly juicy. Liable to crack in some locations. Last of September.

Porter.—Too well known to need description here.

Gravenstein.—Tree a vigorous grower and an abundant bearer in alternate years. Rather tart, but with a rich, aromatic flavor. Flesh tender, a little coarse. A great favorite. Season, October and November.

Winthrop Greening—Fruit a little coarse, but with a fine flavor. Not an early bearer, but bears well in most localities where the tree is grown. Falls badly from the tree before fully ripe.

Pomme Royal—(Syn. *Dyer*.) This apple when well grown has few equals. Very tender, crisp, and juicy, with a remarkably rich aromatic flavor. Requires high cultivation and thrives best in a warm, sheltered situation. Should be well ripened on the tree. Quality poor unless well grown. Season, October.

Dean.—Many have condemned the Dean apple, from a trial before fully ripe, it being then rather tart, but when fully ripe is exceedingly tender and melting. Medium size, and a good bearer. Season, November.

Starkey.—A native of Vassalboro', where it is very popular. Medium size, with a mild sub-acid flavor. Is received with favor wherever introduced.

Jewett's Fine Red. (*Nodhead*.)—No collection is complete without this apple. Requires high cultivation, and even with the best

of treatment the crop of perfect apples will be light, on account of the thinness of the skin.

Mother.—A native of Massachusetts. Skin yellow,—mostly covered with a bright red, changing to a deep red in the sun. Not so tender as some, but with an exceedingly aromatic flavor. Requires good soil or many of the apples will be small and tasteless. Should be in every collection. Season, November to January.

Hoyt Sweet.—A medium sized, very sweet apple, ripening in December, but will keep until March. Quality, best; tender and crisp.

Canada Red.—An old variety, but one of the best when well treated. Medium size, fine texture and lively sub-acid flavor. Season January to March.

Hubbardston Nonsuch.—A popular apple on account of its large size and fine quality.

Peck's Pleasant.—Supposed to be a seedling of the Newtown Pippin, which it resembles both in shape and flavor. With a firm, crisp texture and fine flavor. Is worthless when it becomes mellow.

Talman's Sweet.—Although not of the best as regards texture and flavor, the Talman's Sweet as a late keeper and a fine cooking apple is indispensable; when well ripened it is a favorite dessert fruit with many.

Northern Spy.—One of the best late keeping varieties, retaining its sprightly flavor to the last. Although late in coming to bearing in some localities, it is a good bearer. Should remain on the tree until danger of injury by frost."

DISCUSSION ON THE AMATEUR LIST.

The PRESIDENT. By this report it will be seen that only a list of apples has been presented,—the preparation of the list of pears having been assigned to another member of the committee, who is not present; and the list has not been sent in. You will bear in mind the notice here taken of the fact that the list of apples for amateurs should be somewhat different from the list of varieties to be grown for the market. The former does not and should not fully correspond with the latter. The amateur cultivator, in his garden, grows fruit for use at home. The commercial orchardist grows fruit for the money; he wishes to raise those apples which

will sell best in the market,—although they may not be the best for home use. Good quality, however, is always acceptable in the commercial list; and here the remark might come in that good quality—even extra quality—does not disqualify an apple for cooking. I have little sympathy with the encouragement of the growth of *cooking apples*, that is, supposing they are *only* good for cooking.

It strikes me that this list should be discussed somewhat fully, and it is hoped that those persons present who have had practical experience with these varieties will examine the list and see if it ought to be amended and modified so as to become more fully acceptable to those who raise apples for home use, than it now is. By so doing you will benefit not only persons who are present, but those who are looking for information on this subject. We will listen to such remarks as may be suggested by the report, and hope that the time will be promptly and fully occupied.

On motion of Dr. WESTON,

Voted, That the varieties named in the report be considered separately.

Early Harvest.—The PRESIDENT. This apple, although rather acid, is a very good one, but requires considerable cultivation. The question arises whether allowing it to become fully ripe does not obviate the objection as to its acidity?—it is to a considerable extent the first early apple ripened, and the children are always eager for the first apples. Is there any other good apple so early?

Mr. SAWYER. I should say that it is one of the best early apples.

Mr. G. H. ANDREWS. It needs high cultivation; otherwise it will crack. It is, however, a superior apple. They were very nice last year, but in some cases did not succeed as well as usual. I raised 12 to 15 bushels of them, which I sold for \$1.50 per bushel.

The PRESIDENT. What is its quality as a cooking apple, or for family use?

Mr. ANDREWS. Very good.

QUESTION. Does it cook well before fully ripened?

Mr. ANDREWS. Yes, sir, it cooks well. I consider it one of the most desirable apples I am acquainted with.

Voted, To retain the *Early Harvest* on the list.

Kiny Sweeting.—The PRESIDENT. Perhaps a little explanation may be necessary upon this variety. It originated in Belgrade, and has been carried over a considerable portion of the State. It is known as the King Sweeting throughout the State where it is cultivated; it is rather small but very sweet, tender and juicy. Season, last of August and first of September.

JOSEPH TAYLOR of Belgrade. In regard to that apple it will maintain every thing that has been said of it. I know its origin. My father took the first scion some 60 or 70 years ago, and the first apple we ever got of this kind, grew from that graft. It was eaten by the family of my father, each only had a taste of it, and it was pronounced by us, children as we were, the best apple we ever tasted, and I am certain that it will maintain its reputation to-day. It is the best sweet apple that I ever tasted, I think.

The PRESIDENT. Its texture is coarse, is it not?

FRIEND TAYLOR. Not very.

QUESTION. How does it keep? does it decay quickly?

FRIEND TAYLOR. No; I have known some of these apples to keep into the winter. I have found them as stray apples among my winter apples. It is an apple that will ripen well; some of them will get ripe earlier than others. It is a desirable apple on that account, and it is a great bearer, and therefore it is the very perfection of good fruit.

Voted, To retain the King Sweeting on the list.

Primate.—The PRESIDENT. This apple is not extensively grown in the State, although a fine fruit. There has a question arisen here whether this fruit should be introduced at this point of time as a succession. Will the chairman of the committee inform us upon that point, and whether the Early Harvest does not in a measure take the place of it? I would ask friend Taylor if he raises the Early Harvest?

Mr. TAYLOR. I have never raised that apple, but I have raised the other variety you were speaking of; it is a variety the scions of which were sent me from New York, and for about five or six years I have raised them. I know but little about the Early Harvest.

QUESTION. What time does the Primate ripen?

ANSWER. About the latter part of August or the first of September, I believe.

Mr. POPE. The idea we had in putting it on the list was that

it made a good cooking and eating apple at about the time the Early Harvest was gone.

Mr. ANDREWS. It is an apple that sometimes becomes a little watery. It is a watery apple throughout the whole season; the whole apple seems to be so, but I think that is no particular objection.

The PRESIDENT. The matter here alluded to is one that can be resolved only in this manner. It struck the chair that it might be well to consider that point here; both of the kinds being early apples, and if they ripen at about the same time, whether the quality of the one is equally as good as the other.

American Summer Pearmain.—The PRESIDENT. It is a very good apple and is not very extensively grown in the State, and consequently its recommendation is a surprise to some.

Mr. SAWYER. It is an old variety and we have decided that there was very little known of it in this State, as appears by our fruit list as revised last year.

The PRESIDENT. We know the quality is good enough. The question that presents itself is, whether we had not better inquire into it considerably, from the fact it has not been propagated to any considerable extent, though being an old variety and of high quality.

Mr. POPE. I have known this apple for many years, and have always considered it one of the best. I think it should by all means remain on the list.

The PRESIDENT. I think that as it is an old variety and reliable to a certain extent, we should encourage its culture. We have seen that many times even early apples may be kept out of season.

Voted, To retain the American Summer Pearmain on the list.

Porter.—The PRESIDENT. Too well known to require any discussion. [Passed without discussion.]

Gravenstein.—The PRESIDENT. A tree of vigorous growth and an abundant bearer; it is a great favorite. Season, October and November.

Mr. ALFRED SMITH of Monmouth. They are good, but I wish to ask one question in relation to this tree. I have lost five within a few years. Does it pay to grow them?

Dr. TRUE. It has had a limited cultivation in our State. We find in almost every town a few trees of that variety. I have

seen very few in Oxford county, and I think it is a very rare tree, and it is considered hardly worthy of propagation.

The PRESIDENT. There is one quality of this fruit which redeems it, and that is, it is a good cooking apple. If you have never tried it for that purpose, give it a trial.

Mr. SAWYER. I cannot see why it should not be common in our State. As a matter of fact we know it is grown very largely in the British Provinces, north and east of us. I think there must be some special cause for the failures reported here, although I am not able to say what it is.

The PRESIDENT. There may be something connected with the locality. If they can grow it in Nova Scotia,—and they do grow it very extensively there, for large quantities of them are shipped thence to England, and some of the finest specimens of the fruit that I have ever seen were shown at the Centennial,—but it was largely confined to one locality, the Annapolis Valley in Nova Scotia, so that its success or failure may be owing to some peculiarities of location.

Mr. POPE. There are cases where the bark bursts on the body of the tree, from the limbs to the ground.

Mr. SMITH. Did you refer to me?

Mr. POPE. I have known several cases.

Mr. SMITH. These trees were grafted and they did well for four or five years, and then began to act in the manner described. It is a very excellent cooking apple and pretty good eating. It is very likely the Gravenstein may be raised in this town and in Winthrop. I know another variety, the Fairbanks apple, raised by Mr. George H. Andrews of this town, which is an excellent fall apple; very fair and of good quality. Mr. Andrews can tell you better about it than I can.

Mr. ANDREWS. I propose that we go over the list first.

The PRESIDENT. It may be very proper, and another variety may be suggested for consideration; it is in order, but the time admonishes us that we must act promptly.

Mr. CARR. I think we had better pass that matter. In relation to this apple, the Gravenstein, however, I will say that it is very nice; a short time ago I bought some of them and they were the handsomest apples I ever saw; in fact so handsome that I called my family to see them, and all thought them very handsome. I think it is a variety that should be cultivated.

The PRESIDENT. There is no question about the quality of the apple.

Mr. TAYLOR. I move the adoption of the apple, from the fact that the tree is healthy and the fruit good.

A MEMBER. I would like to inquire if we cannot amend that list and add some other apples? If so I propose that we adopt the Moses Wood.

QUESTION. What season?

ANSWER. From the first or middle of September until the last of November.

Mr. TAYLOR. I would ask if he wishes to reject the Gravenstein?

The PRESIDENT. The Moses Wood will come a little earlier than the Gravenstein, and it has been moved that it be inserted in its proper place in the list, not in place of any other variety, but added to it. Now it should be borne in mind that some of these apples have been tested to a larger extent in the locality where they originated than in any other section of the State. I am not aware of the Moses Wood being objectionable in regard to hardiness or productiveness when tested in other sections of the State. It is desirable in other sections as in Kennebec County. It has proved to be a very good fruit.

A MEMBER. I should like to ask where it has been tested?

ANSWER. In Kennebec county.

Mr. SMITH. It is an annual bearer, and I consider it good fruit.

A MEMBER. It will be well enough for us to know whether it will grow in any other county. From what I have heard of it I have no doubt that it is a very good apple, but we know there are places in Kennebec county where it will not succeed. I think it a much better apple for an orchard than some others.

Mr. POPE. Our experience with that apple is, that it decays quickly after ripening, and is rather acid.

On motion of Dr. TRUE, *Voted*, not to insert the Moses Wood in the list.

Winthrop Greening.—The PRESIDENT. Another local variety found in Kennebec county. It is also quite late.

Dr. TRUE. I have seen some very good specimens in this county, but I am not certain that I have ever seen it in Franklin county.

Mr. ANDREWS. It originated in Winthrop. It is a very heavy apple, fine flavored and of good size. I have but one tree of it.

It has come into bearing within three years—a very good tree, bark hard and smooth, but when the apples get partly grown they drop, although they remain pretty well on my tree. I don't know whether this dropping is peculiar to the variety or not. The apple is, I think, desirable.

THE PRESIDENT. Does anybody ever have heavily laden trees growing Winthrop Greenings?

SEVERAL MEMBERS. Yes, sir.

MR. TAYLOR. I have raised it, and upon the same trees that I have grafted the Winthrop Greening I could have taken four times the profit had they borne some other kinds of fruit. This apple is a shy bearer. I know this to be so, for I have done everything I could and I could not get a good crop from it.

MR. SMITH. I have found that cutting back in June is of great benefit. I learned that from grafting. I noticed that when I cut a tree in the manner I have spoken of, the limbs which I left would fill and hang full of apples. It would make the fruit hang better.

A MEMBER. In our experience during a number of years with this apple, we find that it drops and that the wind will take it off very easily, and we have to gather them before they are fully ripe if we wish to save them; that is the fault with them, they drop too easily, and I do not consider it a very profitable kind to raise on that account.

MR. CARR. I consider them excellent apples, as good perhaps as any raised in the State. They will bring a good price at all times, simply because people will have them. It is really a good bearer and bears every year, too. I have been called upon for scions, and have sent them quite a number of times to people in other sections, and I never knew a person who had them once but wanted them again.

MR. STETSON of Greene. They drop off and are watery.

THE PRESIDENT. The quality of the fruit?

MR. STETSON. The quality is very good, if you can save them.

MR. M. J. METCALF of Monmouth. I consider it a most excellent fruit, and I think that it should not be dropped from the list. It is a shy bearer, as we say, but tolerably reliable.

MR. A. W. TINKHAM. I have had some experience in growing the Winthrop Greening. My father engrafted a tree with it many years ago and it has outlived every other tree in the vicinity, and the tree to-day is as vigorous as it was forty years ago. I have

never seen any trouble with the apples except that they drop off some; but so far as the bearing of the tree is concerned, I consider that it bears very well indeed, and I think it is a superior apple. It will do well on any soil. I have engrafted trees on slaty soils, and in fact on all kinds of soils and with the very best success.

Mr. L. L. ALLEN of North Monmouth, submitted the following list as the result of his own experience:

Apples.—Early Harvest, Sweet Bough, Williams' Favorite, Porter, Rock Sweet, Winthrop Greening, Talman's Sweet, Minister, Rhode Island Greening, Roxbury Russet.

Pears.—Bartlett, Clapp's Favorite, Seckel, Beurre d' Anjou, Belle Lucrative, Lawrence, Vicar of Winkfield.

Grapes.—Delaware, Hartford Prolific, Concord, Old Colony, Northern Muscadine, Brighton, Champion, Salem.

The hour for adjournment having arrived, the report of the committee was laid on the table, with the understanding that its consideration should be resumed at the earliest opportunity.

[The report was subsequently re-committed with instructions to the committee to complete the list in accordance with the action of the Society and their own judgment, for publication in the Transactions.]

Adjourned.

WEDNESDAY AFTERNOON.

The Society re-assembled at 1½ P. M., the President in the chair. The first exercise of the afternoon was an address on the

THE SOIL, AND ITS PREPARATION FOR AN ORCHARD.

By N. T. TRUE, M. D., of Bethel.

Mr. PRESIDENT:—In accordance with my own inclination, and strengthened by your suggestion, I have selected for a theme, *The Soil, and its Preparation for an Orchard*.

I need hardly state that the subject which I have selected, lies at the very foundation of all successful cultivation of the apple in the State of Maine. Certainly, my own more extended observation and experience, failures as well as success, thoroughly con-

vince me that the great army of farmers and gardeners in this State have not yet felt the importance of a better knowledge of the soil, and its most thorough preparation, before anything like success can crown their efforts in raising an orchard. The very few who have succeeded have quite frequently passed through a very bitter experience.

ORIGIN AND CLASSIFICATION OF SOILS.

I am not aware that any classification of the various soils such as would indicate their origin, composition and adaptation to orchard culture, has ever been made. There is now so much intelligence among Pomologists, that such a standard arrangement seems absolutely necessary for intelligent work. I will, therefore, venture to present before you such a classification, which is simple and easily remembered.

As all our soils are made up of rocks which have been worn down or decomposed, it will be very natural to classify them with reference to their origin and composition. Let us then arrange them in the following order :

I.—Soils of Granitic Origin, or Gravelly Soils.

II.—Soils of Schistose, or Slaty Origin, or Schistose Soils.

III.—Soils of Limestone Origin, or Calcareous Soils.

IV.—Soils of Clays and Sands, or Loamy Soils.

I.—*Gravelly Soils* are composed of essentially the same elements as the coarse granites which are so common in Maine west of the Kennebec river. We may then know at once the composition of such a soil, when we know that of granite. The granites of this State are composed of three essential substances,—sand, clay and potash, and less than five per cent. of iron, lime, and magnesia. The potash, so essential in all agricultural operations, is so locked up in granite by the sand and clay, that it is not in a soluble condition, and is of no value. If there were no other agencies at work, nothing valuable could grow in a granitic soil. How then is it made available?

There is one substance found everywhere in the air, water and soils, which needs to be more carefully studied. It is called *carbonic acid*. In very recent books it is called carbon di-oxide. You are all familiar with it as a gas, in the sparkling bubbles from soda water; in the bubbles formed in raising dough for bread; in the impure air which you expire 140 gallons from your lungs every

day; in the poisonous fumes from burning charcoal, in the fire extinguisher, and in the sprightly taste of spring water. In a *solid* state it forms 44 per cent. of all the limestone in the world.

Now there must be a use for this substance somewhere in the economy of nature; and with the hope of meeting the approval of the Society, I will endeavor to explain somewhat fully its action. I hold in my hand a coarse, granite rock. You notice on the side which has been exposed to the weather, that it has a white, chalky appearance. Now the carbonic acid in a state of solution in water has the power of attacking a granite rock and setting free the potash. This carbonic acid is the principal agent in decomposing every rock you see crumbling to pieces. The moment it sets at liberty a particle of potash it combines with it and makes it soluble in water. Whenever the carbonic acid in the soil is in large quantities, or as chemists say, *in excess*, it forms bicarbonate of potash, soda, magnesia and lime. All these new compounds are very soluble in water. The carbonic acid will not touch a particle of the sand or clay in the rock, and these two substances are simply set at liberty. Every intelligent farmer has been taught, that if one proportion of phosphoric acid is combined with one of lime, it forms a phosphate of lime, but it is not readily soluble in water and is almost useless as a manure; but when *two* parts of the phosphoric acid unite with one of the lime he then has a biphosphate of lime, or what is sometimes called superphosphate of lime, which, in this condition, is very soluble in water, and a ready food for plants.

Let us go back to our carbonic acid. When it is in excess in water, it combines in the proportion of *two* parts of the acid to one of the potash, soda, magnesia and lime, and forms bicarbonates of these substances which are all very soluble in water. These salts become entangled in the soil and are the mineral food of your plants and trees. If these salts find their way into the brooks, the salts of potash, soda and magnesia, are swept into the ocean to keep up the supply of salts there, while most of the lime will, on exposure to the air, lose one part of its carbonic acid, and be precipitated to the bottom of the stream in the form of a white powder, and if made solid it would become limestone or marble. Iron will precipitate to the bottom of running streams in the same way, and form beds of iron ore.

Now, gentlemen, this is just what is constantly going on right before your face whenever you cultivate the soil. This carbonic

acid is incessantly gnawing away at the rocks in your soils, and dissolving out the elements that have hitherto been locked up. It may be that some present may for the first time understand one of the simple, yet beautiful operations in nature which play so important a part both in nature and in agriculture. You will now all the better understand the reason why we have heat and cold, rain and sunshine; and how we assist nature by plowing and cultivating and harrowing and hoeing our soils. We do it to expose them to that all pervading substance—carbonic acid.

Much of our pleasure in agricultural pursuits, arises from our ability to trace out these hidden operations of nature. We cannot and never shall know all of nature's secrets, but it is only a fool that will obstinately shut his eyes to what is going on before them. As the intelligent mechanic secures higher wages by reason of his intelligence, so the intelligent pomologist will be much more likely to succeed in fruit culture who carefully watches every condition necessary for a good result. It enables him to select with vastly better judgment such elements as his soil most needs. He understands from what has been said, that every atom of carbonic acid which has been at work setting free these salts from the rocks and soils has, also, produced an equivalent of clay to form our clay beds.

The apple tree can never grow and be productive in a purely granitic soil. Several important elements, such as soda and phosphorus, so necessary for the fruit, are almost entirely absent in such a soil, and no plant or tree can *create* an element. A purely granitic soil is of rare occurrence in Maine. Occasionally it may be seen in the gravelly hills in the western part of Oxford county, and in the northerly portions of Cumberland and York counties. The pine tree, requiring but a small per cent. of these mineral elements, will flourish in such a soil, but not the apple tree.

II. *Schistose Soils* are the ruins of schistose, or coarse slaty rocks. I have introduced this new word because it seems to me a very convenient one in the classification of our soils. Over a large portion of this State the rocks are stratified, that is, they split up into thin slabs and angular fragments. When these rocks are found *in place*, the soil above them is usually full of these fragments. We call these *schists* or *schistose* rocks, and the soils produced from them we choose to name *schistose* soils. I hold in

my hand one of these rocks which you can examine. If these rocks contain a very large per cent. of *clay*, and split up into thin layers, we then call it a *slate* rock.

These schistose rocks contain all the elements in different proportions which constitute a good soil. The experienced eye of the farmer recognizes them at once as *warm* soils. They are more easily decomposed than granite, and the results of this decomposition constitute the mineral food for plants and trees. Here again we find the ever-present carbonic acid busily at work, and its task is much easier than with granite, for it readily works its way *through* the rock and decomposes it more rapidly.

Schistose soils are very conspicuous in the towns of Monmouth, Winthrop, Readfield and Litchfield, and may be considered a fair type of this class of soils. The rocks in these soils are flat and angular, and quite fragile, and are constantly wearing away and forming fresh supplies of plant food.

This class of soils may be regarded the best for orchard culture, and may be found in most towns west of the Penobscot river. It is often the case that there is a blending of the gravelly soil of the first class with these schistose soils. This is so in the towns of Hebron, Hartford, Turner, Parsonsfield, Poland and New Gloucester. All these towns are noted for their large orchards.

III. *Calcareous Soils* are formed from the ruins of limestone, or carbonate of lime. Here the lime is locked up with carbonic acid, and in this condition it is not readily soluble; but when it is saturated with water having an excess of carbonic acid which forms a bi-carbonate of lime it is then readily taken up as plant food.

Calcareous soils are exceedingly rare in Maine. Indeed, at this moment, I cannot refer to a single spot in the whole State, yet lime, as you all know, is very essential for plant growth. Impure limestones abound in patches and larger beds in very many towns, and are of greater value than they receive credit for. In the towns of Hebron, Poland, and in the western part of Norway, the schistose soils are comparatively well supplied with lime from these beds, and I attribute the success of orchardists in these towns very largely to its presence.

In Monmouth there is considerable phosphate of lime in the rocks and soils. This is always a good indication. In the towns which I have mentioned, I do not exaggerate when I state, that a

tree will spring up in a pasture, be neglected by its owner, save perhaps to graft it, and yet make a better bearing tree than is produced in most other towns in the State where they are supposed to receive proper attention, but where lime is very deficient.

IV. *Loamy Soils*, when pure, are composed of sand and clay as a mixture, or as a compound called silicate of alumina. When absolutely pure they are entirely unfitted for the cultivation of crops, for clay rarely ever enters into the composition of plants, while no plant we raise can live on sand alone. Loamy soils in this State are rarely ever pure, but are more generally composed of the fine sediment from the schistose soils of the second class, and contain in variable proportions all the essential elements of a good soil. These finer sediments are found on the lower levels of land and constitute the most valuable soils for the cultivation of the potato and the grasses. As these soils contain a large per cent. of clay which is very retentive of moisture, they require careful drainage for an orchard, otherwise tender varieties, especially, are liable to be winter killed. I have seen many fine orchards in Cumberland county in this class of soils. The successful culture of the apple and other fruits in Bangor, and vicinity, has been effected in this class of soils.

Now, gentlemen, it seems to me that with a well defined idea of these four classes of soils as types, we can by inspection, and by our experience not only recognize them, but all the shades of mixture from any two or more of these. Indeed, you already do this in your practice, and I have only called your special attention to it, that your discussions on this subject in the future may have some uniform standard of reference.

COMPOSITION OF THE APPLE.

I think you will now easily comprehend the relations of an apple tree to the soil, if I should take one of the Roxbury Russets that grow so fair and large in this vicinity, and analyze it. Suppose I take 100 pounds of Russets, dry them and then burn them till nothing is left but ashes. These would weigh about four ounces,—a small, but a very precious substance that has been taken out of the soil where they grew. We shall better appreciate the illustration if I take 100 pounds of these ashes. There will be found in them 13 pounds of phosphoric acid, 7 pounds of sulphuric acid, 38 pounds of potash and 25 pounds of soda. There

will also be a little lime, iron and magnesia. The *mineral* food necessary for our Russet will then be a *little* lime, a little magnesia, a little iron and a little sulphuric acid ; and a *great deal* of phosphoric acid, soda and potash.

Now we cannot get rid of such facts in pomology. We cannot raise Russets or any other variety of apple where these elements are deficient in the soil ; we *can* raise them where they are abundant. Schistose soils and well mixed loamy soils, generally abound in them.

I was struck many years ago at the amount of phosphate of lime in the rocks and soils of this very town of Monmouth, and, it is abundant, but not too much so by any means, in every apple growing section of the State. Furthermore, the rocks which contain phosphate of lime, also contain associated with it large quantities of soda and potash. The sulphur rocks in this town are easily decomposed by the application of lime, by which the necessary sulphuric acid is obtained which combines with the lime and forms gypsum, or plaster of Paris.

Now there is no theorizing thus far. The relation between the tree and its soil is well understood by intelligent pomologists. In the towns which I have indicated, the fortunate possessor of such a schistose soil hardly realizes the difficulties under which men labor in other sections in raising an orchard. He hardly finds it necessary to supply his soil with artificial manures to any great extent. They are already in the soil. The intelligent practical man will supply plaster of Paris for his sulphuric acid and lime ; bones, guano and superphosphate of lime for his phosphorus ; wood ashes for potash, and refuse brine, seaweed or common salt for soda. The farmer who can procure these substances at the cheapest rate and in the right proportions, will succeed not only in furnishing the right materials for a thrifty orchard, but for almost any other crop.

COMPOSITION OF THE APPLE TREE.

In presenting before you the elements necessary to produce an *apple*, I indicated *all* the *essential* elements necessary to be provided in some way for the production of a handsome Russet ; but, if I should stop here, I should lead you into a grave mistake. The proportion of each element in the growth of an apple is quite different from that of the tree which produces it.

The wood of our Russet apple tree contains in its ashes about $19\frac{1}{2}$ per cent. of potash, while its fruit requires 34 per cent., or nearly twice as much. You will find only a trace of soda in the tree, while the fruit requires as much as 25 per cent. of soda, indicating that if you have a barrel of waste brine, or a bushel of dirty salt, you would apply it to your fruit bearing trees, and not to those still in a growing condition. On the other hand, while there is less than 5 per cent. of lime in the fruit, the wood contains as high as 63 per cent., and would indicate a supply of that substance in soils when it is deficient. The fruit demands as high as 15 per cent. of phosphorus, while the wood requires only one-third as much, or 5 per cent., indicating that you would apply bone manure and superphosphate of lime to your bearing, and not to your growing trees. These facts are instructive to us as *indications* of what we may do.

AGRICULTURE NOT AN EXACT SCIENCE.

You must have noticed that I have frequently used the mild word *indications*, in pointing out to the pomologist the character of his soil. That is as far as we are warranted in going at present. In our weather report we have only the word *Probabilities* written over the morning bulletin. No man yet dares foretell how many inches of snow or rain will fall on a certain spot to-morrow, nor whether this or that local spot will certainly have snow or rain at all. Notwithstanding these minor defects, the sea captain consults the weather chart and the cautionary signal, before he decides whether or not he shall set sail. If he fails to do this, he runs the risk of losing his insurance, so great is the dependence placed on these reports by the underwriters.

Just so with the intelligent pomologist. He will perfectly understand me when I tell him that he cannot measure out just so much of one substance and so much of another, and expect to receive an exact mathematical product in return. The highest human attainment is that of exact mathematical measurement, yet no civil engineer ever measured a distance of one hundred rods the second time and came out with his first result. The cultivated musician measures with his ear the precise length of his string, in order to procure the exact number of vibrations in a second, yet he is never absolutely perfect. Chemists have been hard at work for a century endeavoring to find the exact weight of an atom, yet

they have only approximated to such an important result. Astronomers have labored for centuries with the aid of the most costly instruments, to ascertain the distance of the earth from the sun, and are still conscious that they may be in error one or two millions of miles.

The same fact is true of agriculture. It is not an exact science, but every step we take in the right direction leads us nearer to a correct measurement. I have no patience with that class of men who will have nothing unless it is absolutely perfect. They are always disagreeable and useless men. We all travel through dark and mazy forests, and by different and often winding paths in our search after truth. Dark and crooked though our way may be, it is no excuse for us to shut our eyes to every glimmering ray, and go utterly blindfolded. We constantly put in exercise our better judgment, with the full assurance in the outset that no infallible rules can be given. We can only partially explain all the processes of nature. She works silently and secretly. We witness every day some *result* of her operations, and trace them back as well as we can to their cause. He who cultivates his powers of observation, and carefully watches the relations between causes and effects, is the man who is the most likely to succeed in the cultivation of an orchard. He cannot do it by theorizing, but by careful experiment. He must take facts and use them just as he finds them. No man who lived in the Eastern countries three thousand years ago, ever imagined that an apple could be kept over winter. At last the fact was established that it could be done, and everybody now acts in accordance with it.

We have thus far observed the action of carbonic acid only as an *instrument* for unlocking the *mineral* substances in the soils, which are taken up by the roots of plants. We must add to our soil for an orchard, manures of vegetable and animal origin. These contain the same elements as the rocks themselves, but they are set free by the aid of another element, *oxygen*, or if you choose to call it, common air. This element attacks your manures, and sets free the mineral substances, besides forming new compounds, ammonia, water and carbonic acid. Thus you have two very important agencies at work in the preparation of your soil, carbonic acid, and oxygen.

Carbonic acid does not enter the roots of plants, but is taken from the atmosphere. Look at a single green leaf. It is a wonderful thing. You can take some charcoal, or carbon, and by

burning it combine it with the oxygen of the atmosphere and form carbonic acid, but no chemist has ever yet invented a furnace hot enough to separate that charcoal from its oxygen. They cling together with a terrible grasp. That leaf which your mind's eye is looking at, can breathe this carbonic acid into itself as if it were lungs, and the gentle rays of the sun that shines upon it have power sufficient to separate these two elements. The carbon willingly obeys the command, and goes into the tree to build up its woody structure. Thus the charcoal of your tree is obtained first from the decomposition of vegetable and animal manure in the form of a gas, which we call *carbonic acid*; then it passes into the atmosphere where the leaves of plants prepare it in a condition to build up the tree.

There is then a perpetual round going on among these elements from dead to living matter, and from living to dead matter. When we cultivate our soils we only aid nature in her work. We can add no new property to these substances; we only hasten the work so as to give a rapid growth to whatever we cultivate.

PREPARATION OF THE SOIL.

If I have not wearied your patience by this discussion of the character of the soil, I will now select a site for an orchard, which may be supposed wanting in some or most of the important elements we have indicated. Let not any one be frightened if my ideal is a very high one. I will let you down to a lower level before I close.

If any one of you has a thousand dollars for which he has no earthly use, let him select for his orchard one acre of land from his field which has been cropped for many years. Let it be permanently fenced. I assume that it is a rocky schistose soil, and naturally drained. Let him plow it in autumn, and in the following spring manure it well and plant and cultivate potatoes. Keep the ground mellow and clear of weeds throughout the season. By this course he receives a present profit, which is an important consideration with most farmers, especially such as do not have a surplus thousand dollars. After the potatoes are harvested, plow a narrow strip on one side of the piece, and with a good supply of help, dig and throw to the surface all rocks large enough to obstruct the plow. Follow each furrow with the plow again, or with the subsoil plow, and loosen the soil as deep as you can. If I

dared to say so, I would have you trench every foot with pick and spade till you reached the hard pan, or a depth of eighteen inches. Pile the stones back into the trenches for a drain. The furrows should run in the direction of the natural drainage of the land. Treat in the foregoing manner just as large a strip as you have the time and means to accomplish that season, *and no more*. Haul on to the strip all the manure you can afford of whatever kind, and plow it in. The next spring manure in the hill and plant and cultivate thoroughly for a crop of corn. As soon as it is harvested, spread over the ground a generous coat of manure, plow it in as deep as you can, and harrow it smooth. Stake out the spots for your trees at a distance of twenty-five, or better still, thirty feet from each other. Plow six furrows in one direction so as to have the dead furrow directly over the spot where you plant the tree. Cross plow it with six furrows in the same manner. The furrows need not be more than eight feet in length. This will save much shoveling and prepare the soil for the roots of the tree. Shovel out a generous hole, say four feet or more square, and fill in with old compost manure and soil mixed together. Probably the cheapest and best manure for this purpose, is composed of vegetable mold, muck, leaves, ashes and lime, and exposed to the soap suds from the house, and carefully worked over several times during the season. Level off the spot and let it remain till spring.

The next step is to select good trees and set them out very carefully. Prepare the ground and plant with beans in drills just wide enough for your narrow cultivator to run between the rows, and at the same time place some coarse mulch around each tree. For several successive years any hoed or root crop may be cultivated, provided you are not stingy in the use of manure, and keep the ground mellow by clean cultivation. Some would prefer no crop at all after planting the trees. Of this I am not quite sure in our hot summers, but no grasses or grains should be sown till the trees have acquired sufficient growth to bear. Everything should have this end in view. Keep the rest of your acre under good cultivation, and take up another strip each year till you have in this manner gone over your acre. By this time your one thousand dollars will be expended, but at the end your trees will be worth, at least, ten dollars apiece, and you could not be induced to sell one of them for fifty dollars, you would love them so well.

It is right here, gentlemen, that I want to impress on your minds the difference between the habits and wants of an apple tree and those of our ordinary field crops. In the latter the roots extend but a few inches in depth, and require the cultivation and manures to be just beneath the surface of the soil. With trees it is different. The roots of a thrifty young tree will run down several feet in a rightly prepared soil, in search of food. This deep culture will prevent young trees from being checked by summer drouth, which destroys not a few trees, or prevents their rapid growth, and leaves them to die a lingering death after a feeble existence of two or three years.

Is my ideal too high for the practical farmer, or gardener? Is it necessary? I am now going to fight those little uprisings in your throats, by some bits of personal experience and observation. Thirty-seven years ago, I fenced a little yard of thirty feet by seventeen, about twenty rods from where we now are. I trenched it all over with a spade, and labored hard in doing it, manured it and planted it with potatoes and corn. The next spring I again spaded it very thoroughly, manured it heavily and sowed it with beets and carrots. At the same time I planted a row of young maples around the border of the plat which I brought from the woods on my back. I headed them all in. That same year, one tree produced a shoot fourteen inches in length. Did any one present ever see such a growth the first year of transplanting a maple? It is the only instance in my experience. Persons now living can testify to the tremendous growth of the whole row of trees. As I look at them to-day, they are the only things which remind me that I am older now than when I planted them.

In a corner of the same house-lot I planted the same spring, a large apple tree which I had removed from the old nursery planted some twenty-five or thirty years before by Gen. John Chandler, on his farm near the Academy. I dug over the ground some eight feet square, but which was fifteen or eighteen inches lower than the land adjacent. I set out the tree as high as I could, and with a wheelbarrow, with which I had become quite familiar in those days, I wheeled in a large quantity of turf, chip manure, and soil, to bring it up to a level with the rest of the lot. I clipped the tips of nearly every twig on the tree, *but cut off no branches*. The next spring I had it grafted with the Fall Harvey apple. The

scions took, grew rapidly and made the handsomest tree I ever owned. A few years since I visited that tree, and enjoyed it as I would an old friend. I measured the diameter of the top and found it to be thirty-three feet. I have been informed that it has always been a prolific bearer, and is still a handsome tree.

Twenty-five years ago I was taught from the books to prepare an asparagus bed by trenching a spot eight feet by ten to a depth of three or four feet, and filling it up, mixed with a cord of stable manure. This I afterwards learned was unnecessary for asparagus, as its roots descend but a few inches, but the roots of a neighboring apple tree found their way to the coveted spot, and for twenty-two out of twenty-five years, I have received my annual supply of fall fruit for family use from that one tree. It was the best practical lesson I ever learned in pomology, and my only regret now is, that I had not put it fully in practice ever since.

So far my experience. Now for my observation. I have a neighbor who selected a plat of ten square rods eighteen years ago, employed a laborer to trench it all over to the depth of eighteen inches, and throw the rocks to the surface. This he did in two days and a half, but which but few men could have done in that time. He then manured it, planted his garden and covered it with apple trees. For several years past he has had his family supply of apples from that little spot. He has planted trees elsewhere on his farm in the ordinary way from time to time, but I am not aware that he has ever gathered a peck of fruit. If I have not proved my point to your satisfaction, I have to my own. The rule I would lay down is this: Plant one tree a year if you have the ground well prepared for it. Plant two, or as many more as you can afford, each year. A better general rule would be: *Plant just as many trees, and no more, as you have land previously prepared for them in the best possible manner.*

The amount of manure required to keep an apple tree in vigorous action is quite large. I have never yet been able to satisfy myself how much manure a large old apple tree would make use of where the soil had become exhausted. I think a cord would not be too much if well trenched into the soil. How far am I out of the way in my judgment?

I have no doubt that in many locations, a lower standard of cultivating an orchard might be practiced, but I doubt if anything short of what would make a good garden would be the successful

way. Certainly no lower standard should ever be attempted than that of preparing the land for a large crop of corn.

If I mistake not, a large majority of the attempts at raising orchards in this State have been in the following manner: A piece of land was plowed up in the field without being separately fenced, then planted with potatoes and corn for two years, and then sowed with grain and grass seed. Just at this point the apple tree agent contrives to be present, and the owner buys twenty-five dollars worth of thrifty trees from a Western nursery and sets them out in as small holes as possible. The limbs grow half an inch that year. The next year they leave out and the branches grow a quarter of an inch. Two or three in a favored spot do something more. The third year he finds several of them dead,—browsed down by his cattle on the previous autumn, broken down by the snow, burned to death by the sun, or what is more likely, every leaf has been gasping for breath ever since it was set out, and it dies by being literally starved to death. The trees have been paid for, but woe to that apple tree agent if he makes his appearance at the end of the third year! Five or six of them are left to struggle on with the vain hope that some time or other in the Providence of God, they will produce apples as large and as handsome as the pictures in the apple tree agent's specimen book. I think I do not exaggerate when I tell you that a million dollars' worth of fruit trees have been starved to death in this State within the last thirty years,—starved in just the way I have endeavored to describe the process. As the farmer looks at a black hearted apple tree, or feels its spongy bark, and sees it dying in this way, he is throwing out of his life his best years of labor and hope, and the blood flows through his system more sluggishly, than if he was filled with joy at his thriving orchard well laden with fruit. He who has a young and thriving orchard never grows old. The loss of a young orchard is a calamity.

MULCHING.

It may be within the province of my address to call your attention to the subject of mulching. I think that the experience of nurserymen is in favor of vegetable substances for this purpose, and that in no case either for mulching or as a manure, should undecomposed animal manures ever come near the roots of an apple tree; a compost such as may be made on most farms from

surface soil, leaves, muck, ashes and lime, thoroughly worked over, will always be of value.

I do not remember of seeing the point discussed, but it has occurred during the experience of a few years, that there should be a distinction made between our practice of mulching merely for the sake of keeping the ground loose and free from weeds by the use of straw or weeds, and the use of strong though coarse manures. If trees are mulched year after year with manures, a multitude of fibrous roots spring out from the tree above the surface of the ground, and the mulch is filled with them. Is this as well as to trench in the manure or spread it broadcast over the surface, and mulch with coarse vegetable substances, as leaves and straw?

It is a problem, I think not quite solved in the minds of pomologists, whether we shall make the best application of manure by spreading it over or near the surface of the ground, while trees are in a bearing condition, or whether we shall not secure better results by trenching in the manure at a greater depth. It may be that both methods are equally necessary. It is certainly worthy the consideration of the Society at some future meeting.

Allow me to caution you never to replant an old orchard, unless you can follow to the letter the high idea I have set before you. To accomplish anything, a new soil must be made. I have already portrayed the character of an orchard starving to death. Unless the greatest pains is taken, the same results will follow your efforts in this direction. If you lose a sheep it can at once be replaced, and you will soon receive a profit, but not so with an apple tree. If you have a sickly sheep, you may nurse it month after month, and then it dies. You have lost your time, your profits and your *sheep*. It is worse than this when you have a sickly looking apple tree. You dislike to cut it down as probably you should do, and so you let it remain year after year a sickly looking tree, and then—let it *die*.

HIGH CULTIVATION ALWAYS NECESSARY.

It is very difficult raising our ideas to the point that high cultivation is as necessary for an orchard as it is for a garden. A wrong habit has unconsciously been handed down from our fathers who could plant trees in a virgin soil and they would grow and bear bountifully without any additional manuring. We know well

enough from experience what is necessary for a garden. We visit our city cousin, and are surprised and sometimes mortified, that his little garden spot produces more fruit than our own orchard at home. With the most of us the cultivation of an orchard means *work*—persevering, *hard work*. The man who spends half a day in digging and preparing a hole for one tree, is quite as likely to receive as much profit in ten years, as the man who digs twenty holes and sets out twenty trees in the same time. When your wife brings along her empty flower pot, she knows what she is about when she tells you to get such and such soil for such a plant, and she closes her demand by emphatically declaring that you *must get the richest earth you can find*. Cheat her in this thing if you can.

The more nearly we approach our high ideal in the cultivation of an orchard, the shorter the time before trees will be in a bearing condition. A difference of several years can, in this way, be easily accounted for; and as we have but one short life to live, it is of much personal consequence that we see the fruit of our labors as soon as possible. I think I may lay it down as a general rule, *that the higher the degree of cultivation, the shorter the time necessary for the production of fruit*. Not only is *time* an important consideration, but I think I may safely give another general rule, *that the higher the degree of cultivation, the larger and better the quality of the fruit*. As the *quantity* of fruit is an important consideration, still another general rule may be given, *that the higher the degree of cultivation the more abundant will be the crop*.

CULTIVATION OF THE HABIT OF OBSERVATION.

One of the first things necessary in the education of a child is the cultivation of the habit of observation. With this habit once formed he never becomes stupid, because he is busy seeing things and reflecting over what he has observed. The same is true of *men*. I have noticed this as the most prominent trait in every gardener, pomologist or naturalist that I ever saw. This faculty is especially necessary while preparing the soil for an orchard, as well as in watching the growth of the tree. The conditions of things are so various, and the processes often so hidden, that we shall constantly find something new to add to our knowledge and increase our skill.

During the last autumn I saw a snail in the midst of a wooded swamp on my farm, where the muck is some eight feet in depth. Its thin shell was composed of lime. I do not believe there is a chemist living who could detect a particle of lime in that soil, yet that snail had succeeded in extracting enough lime from that muck to cover his body. We are placed on the soil like so many snails, to learn as far as possible all the secret processes by which its mineral treasures can be unlocked and made useful.

THE PRESENT AN AGE OF PROGRESS.

The age in which we live is an age of progress. Science has made wonderful strides since we were born. Science and art have revolutionized every occupation in our land, and he who does not adapt his business to this new order of things will starve. It will not do to shut our eyes to the changes that are going on in the science and art of agriculture. Since I was a resident of this town, the mowing and reaping machine have been invented. The sewing machine has found its way into almost every household, while the rail cars go and carry us everywhere, and the lightning acts as our mail carrier. A flying machine seems all that is necessary to make the list complete, which it is hoped some enterprising genius may yet invent. No man is so stupid as wholly to shut his eyes to the wonderful achievements of science and art. Shall *we, too*, not make equally wonderful discoveries in our appeal to mother earth, that she may yield up her hidden treasures for our profit and pleasure?

CONCLUSION.

Now, gentlemen, while I have set before you a very high standard, I have endeavored not to be unreasonable, or suggest what is beyond the ability of any one to carry out. What I have said, I wish you to regard as hints and suggestions, rather than as positive commands. A long series of years in trying to raise an orchard, has made me very modest in my expectations, but I trust the combined experience of those who *have* been successful, will be so developed by this convention, that good orchards rather than poor ones shall be the rule, and not the exception in the State of Maine.

There are some men who take great pleasure in looking at the patient ox, or a beautiful horse. I quarrel not with such. But there is something pleasing at the sight of the man whose delight

is in looking at a thriving tree laden with fruit. It reminds one of the story of Pomona, the goddess of the apple orchard. She cared not for forests and rivers, but loved the cultivated country, and trees that bore delicious apples. Her right hand bore not a javelin, but a pruning knife. Armed with this, she busied herself at one time to repress the too luxuriant growth, and curtail the branches that struggled out of place; at another, to split the twig and insert therein a graft, making it adopt a nursling not its own. She took care, too, that her favorites should not suffer from drought, and led streams of water by them that the thirsty roots might drink. This occupation was her pursuit, her passion. The divinities of the field desired to win her, but Vertumnus loved her best of all. Often in the disguise of a reaper, did he bring to her corn in a basket, and looked the very image of a reaper. With a hay band tied around him, one would think he had just come from turning over the grass. *Now* he bore a pruning hook and personated a vine-dresser; and again with a ladder on his shoulder, he seemed as if he was going to gather apples. In this way he gained admission to her presence. One day he came in the guise of an old woman. The old lady entered the garden and admired the fruit. She advised Pomona to *leave* all her other admirers and accept Vertumnus, for he is *young* and *handsome*, and can make himself just what you command him. He loves the same things that you do, delights in gardening, and handles your apples with admiration. But *now* he cares nothing for fruit, nor flowers, nor anything else, but only yourself.

When Vertumnus had spoken thus, he dropped the disguise of an old woman and stood before Pomona in his proper person, as a comely youth. It appeared to her like the bursting of sunlight through a cloud. The sight of his true form prevailed, and she accepted him as her own.

Happy is the man who loves a beautiful apple tree, which his own hand has cherished! His name is Vertumnus, and his tree is Pomona.

The PRESIDENT. Doubtless it would have been agreeable to all present if the speaker who has so closely held your attention this afternoon could have continued until the hour of adjournment, yet perhaps he has done as much this afternoon as we could well ask of him at one time, and we may have an opportunity to hear from him still further before the close of the exercises.

The time will be further occupied with a discussion of the subject of fruit growing in connection with general farming; and since farming is the chief business followed in this community and nearly all its people are engaged in fruit growing, the discussion will be commenced with reference to

FRUIT GROWING IN THE TOWN OF MONMOUTH,

by one who is familiar with it, Mr. George H. Andrews of Monmouth.

MR. ANDREWS. If it would not be deemed irrelevant I would say, prior to entering upon the subject, that I have been much interested in the address of Dr. True, and I hope it may get into the hands of every man in Monmouth and of every other town in the State. I am particularly desirous that it should go into the hands of every man in Monmouth; and now for one dollar every man may be entitled to and will receive the Society's Transactions containing this paper. Is not that cheap enough? What do you think it cost Dr. True to give us that production which we have all listened to with so much interest? How many years of labor has he spent in preparing it? "He wrote it out in a day," some one will say. No, he did not write it in that time; he spent years and years to give us the principles of that paper. Now I simply refer to this for the purpose of submitting a motion, which is, that Dr. True be requested to furnish a copy of his address to the Secretary for publication in the annual report.

The motion of Mr. Andrews was adopted.

MR. ANDREWS proceeded: We are doing something in the town of Monmouth in the way of fruit growing, and we have begun to do it in earnest. A good many trees were set out thirty years ago, but very few of them are alive to-day; but we have been learning and thinking all the while on this subject. I will name a few persons who have within the last ten years planted orchard trees to the number of 100 or more each, and I know that a large majority of these trees have been well set out and well cared for, and are now doing well: Joel Witherell 250, S. C. Andrews 250, A. Wyman 150, O. W. Andrews 150, J. W. Jackson 100, Levi Butler 150, H. W. Tilton 100, A. C. Crossman 500, Dr. D. E. Marston 1400, A. J. Fogg 400, David Marston 400, G. W. Fogg 300, G. H. Andrews 300, N. F. Prescott 300, H. H. Sawyer 150, J. D. Donnell 500, A. W. Tinkham 500, J. R. King 400, Alfred Smith 400, B. Walker 500, Samuel Robinson 200, Charles H.

Berry 200, F. L. Stanton 300, Edwin Simpson 100, Jacob Robinson 100, George Robinson 100, Seth Fogg 100, H. G. Titus 300, J. A. Strout 100,—making, with other persons whom I might name who have set less than 100 each, a total of more than 10,000 trees planted in this town within the last ten years; and there are still others whose names I do not recall at this moment. This, I think, shows investigation and interest in the business.

In setting my own trees, the holes were dug in the fall, large and deep; in the spring the top soil was thrown in at the bottom, and a compost above it. They are now beautiful trees,—that is all I have to say in regard to them.

We have some fine fruit here, (pointing to the tables,) and the most of it was raised here and at North Monmouth. The best fruits that we see on exhibition are generally grown in villages. Such apples as these are developed by good culture. The trees that bore them were not hungry last year. Here are Black Oxford apples. They are good for nothing if not well grown. It is of no use to raise them unless you take good care of the trees,—mulch and manure them—or in other words feed them, and then you will get good fruit.

Mr. President, we are happy for this occasion. We are glad to meet you and the Society here, and we hope to receive a benefit from your presence with us. We shall be a thousand fold better for this meeting to-day, and we shall hold in grateful remembrance what you have done for us.

Mr. ALFRED SMITH, in response to the call of the President for further remarks upon the subject of fruit growing in Monmouth, presented the following statement:

Twelve years ago, being in want of some young apple trees, I bought of an agent of Chase Brothers, twenty-five such trees, and planted them (well cut back) on three-quarters of an acre of good land, in good condition and having a western aspect. Twelve of them did not prove true to the order, and of these twelve seven proved not to be well adapted to the soil, or climate, and after doing well for a few years, have died. Five of the seven were Gravenstein and proved tender and winter killed. The other five of the twelve (not true to order) are doing well and in bearing, but the fruit is worthless and I shall have to re-top them to better varieties. The remaining thirteen were Roxbury Russets, Northern Spy and Talman's Sweet, and are in bearing and doing well.

About the time I ordered the above trees, I planted a nursery.

When two years old, budded it to about all the standard varieties then in the State, that are adapted to central Maine, viz: Northern Spy, Roxbury Russet, R. I. Greening, Talman's Sweet, Yellow Bellflower, Nodhead (Jewett's Fine Red), Hubbardston Nonsuch, &c., and have planted them in orchard form on about three acres of land in good condition,—making in all about four acres of young orcharding—besides two acres of old orchard, in good condition, which has generally been kept free from the ravages of the caterpillars, at an expense of from twenty-five to thirty dollars per year, for the last two years.

And we think our trees have well repaid us in fruit, the profits of which, year before last were \$225, and last year, \$60; besides having the pleasure of seeing our trees clothed in green foliage and giving promise of fruit another year.

We plant our trees two by one and one-half rods apart,—believing that light and air are essential to their health and vigor, as well as rendering the fruit less exposed to mildew, the spores of which attach themselves to the fruit in wet and warm weather in August. We also need room to cultivate the trees till in fruit, and then it requires room to move ladders while gathering fruit and destroying insects. Again, we regard a western or northern slope or aspect as preferable to a southern or eastern one. On the former, the trees are checked in summer by the cooling wind, and grow more firm and less porous, and ripen their wood and bark earlier in autumn and the fruit is less exposed to mildew and the depredations of many insects, and in winter much less exposed to the direct rays of the sun and the alternate freezing and thawing in the spring months; while on the latter it is *vice versa*.

We have from eight to ten thousand apple trees from two to three years old, partly budded; also one thousand or more good, stocky pear trees, (30 or more of the best varieties, well adapted to this climate,) from two to five years old.

So far as our experience goes, we regard the Doyenne d' Ete, Beurre d'Assomption, Clapp's Favorite and Bartlett as good for summer and early autumn; for late autumn, the Beurre d'Anjou, Sheldon, Louise Bonne de Jersey, Flemish Beauty, Duchess d'Angouleme and Buffum; for winter, the Beurre Langelier, Glout Morceau, Lawrence and Vicar of Winkfield. I see no reason why Maine may not as well raise her own pears as to hire Massachusetts to do it for us, and we *can* if we feed as high and as persistently.

We have now one-fourth of an acre of standard pears in orchard form, planted one by one rod apart, with a dwarf in the centre of each square, and one-half of an acre more to be planted in the spring. The land is well plowed, dressed and under-drained. We have also one acre of strawberries, in good condition, well mulched and now covered with boughs; also an abundance of black cap raspberries, besides currants, gooseberries, plums and cherries.

FRUIT GROWING IN CONNECTION WITH GENERAL FARMING.

ESSAY BY JOSEPH TAYLOR OF BELGRADE.

Of all the industrial pursuits among men, for the life-giving sustenance of the human family, agriculture is the parent. From our mother earth is derived the supply needful for our physical wants; and fruit growing is but one of the many branches of agriculture; yet I deem it one of its most important branches,—especially in the cultivation of such fruits as are native or best adapted to the soil and climate in which they are to be cultivated; and much of our northern temperate zone seems to be especially congenial to the cultivation of apples, pears, and many of the smaller fruits. But especially do I place the apple culture, and its yield, for general use, and for profit to the grower, at the head of all the varieties of fruits that are grown in our own State, and as a part of the business of farming I think there is no one branch so remunerative to the cultivator as that of apple raising, considering the outlay for cultivation. I am aware that man cannot live by apples alone, but inasmuch as “money answereth all things” he can sell his apples for money, with which he can buy more bread and other necessities for his family than could be obtained for the same outlay of time and labor in any other branch of farming. I am aware also that choice fruit-bearing trees do not spring up spontaneously in our own country, but need to be planted by the hand of man and nurtured by the skill and with the care of the cultivator; and a lack of these important requisites is the principal cause why there is such a failure in successful fruit growing. It is true there are many destructive insects that prey upon our fruit trees and fruit. Some of them may be considered as almost chronic afflictions, but many are itinerants, and rage only at intervals, and in particular localities at the same time. Such was the case with the caterpillar last year. That species known as the Forest tree caterpillar, is, of all the insect tribe, the most insidi-

ous foe to the cultivation of the apple that we have to contend with. The failure of the crop of this fruit in very many sections of Maine the past season was owing to his persistent ravages. Old apple trees especially, and the branches of such as were inaccessible to man, were almost entirely denuded of both leaves and fruit, and yet after all the destruction of the apples on the old trees by this enemy, such fruit growers as had had in previous years a provident forecast of the necessity year by year, of replenishing their orchards with young and thrifty trees, had the pleasure, after the contest with the enemy was over, of harvesting a pretty fair yield of apples.

Now, in speaking of the comparative value of the different kinds of farm products, by placing the apple crop at the head of the list, I do not intend to exclude, by any means, the cultivation, in degree, of most other kinds of farm products, and so much of all the different kinds as are needed for family use, such as potatoes, garden vegetables, all the different varieties of small fruits, and even corn, and if the farmer has the courage to cultivate wheat enough for flour for his own use, he is to be commended for his frugality and enterprise; and the cultivation of all these different products of the farm and the garden need not interfere with that attention to the orchard which is needed for its successful development of growth, and the product of fruit.

In making these remarks, I assume that the orchard has already been planted out, and if not, I advise every farmer that has neglected it hitherto, to lose no time, should he live and be in health at the opening of spring-time, in preparing at least one acre of ground for an orchard, and setting it out with apple trees of healthy and seedling growth.

I will now give my views in reference to the cultivation of the pear, as it regards the profit or otherwise of its general or extensive cultivation. I do not deny, nor do I suppose any lover of good fruit will, that the pear in its own intrinsic perfection, is a luxury unsurpassed by most kinds of fruit, but to enter into an extensive cultivation of it, for other purposes than for home use and for a limited home market, would seem to me of doubtful propriety. I have cultivated the pear, on rather a limited scale it is true, for the last twenty years, but as far as my experience has gone, I have not found the culture of the pear so remunerative as that of the apple. True it is, that the pear tree is not liable to be infested with so many obnoxious insects as the apple tree; but

there is a malignant blight, which seems innate to the pear, and which I have some fears will prove in time a serious obstacle to its cultivation. This blight has appeared on my pear trees the past season. It has mostly been confined to the limbs of the trees, and seems to be produced by some virus matter in the sap, yet I am not certain that this is a correct conclusion in the case. I think the blight has not yet become very extensive in our State, but in some of the Western and Middle States it has already infected the young pear trees to a fearful extent. As soon as there is any appearance of disease in a limb, let it be immediately removed, and thereby it may be that the body of the tree and main portion of the limbs will be preserved.

Fruits of most kinds, and especially the apple, have been very abundant in our markets this season, but this abundance has not been furnished from the product of our own State, but from neighboring States, and at a very low price. Yet owing to the exceeding scarcity of money, the non-bondholding portion of the community has been deprived of that luxury which in former years they have been freely supplied with. As far as I have been informed, the belt of country including the counties of Oxford, Androscoggin, Franklin, the greater part of Kennebec and Somerset, embraces that section of the State in which the caterpillar has been the most destructive to the apple crop. In other sections of the State I am informed that the yield of apples has been quite abundant.

The prospect of a good crop of apples another season, I think is fair from the indications of the fruit buds upon trees whose leaves were not entirely eaten off by the caterpillars last year, but we must not expect fruit from trees that were stripped of their leaves at a time in the season when the fruit buds were being developed preparatory to a growth of fruit the next year. For it will require one season of growth for the tree to recuperate its lost vigor, and mature the germ in the bud indispensable to the production of fruit the succeeding season. From my own observation in regard to the appearance of the caterpillar cones on the limbs of the trees, I do not look for the ravages of that enemy to a very great extent another year. It is true I have discovered a few of the cones of the Forest tree caterpillar, which may be distinguished from those of the tent caterpillar by their peculiar glossiness and a darker color, and their encircling the limbs, forming a ring around it, while the tent caterpillar forms its cone only

on the side of the twig, and of a lighter color and covered with a sort of fustian coating. By a careful search for these cones upon the limbs of the trees during their nudity, we may destroy the most of them. For it is a remarkable fact that but a very few, probably not more than one in a thousand, of the myriads of caterpillars that destroyed our apple crop last year, survived the period of their chrysalis state. The larger portion of them died immediately after becoming full grown; and I think their destruction was mainly caused by an active little gnat or maggot furnished with a sharp-pointed proboscis, with which he penetrated the body of the caterpillar.

Another enemy to fruit growers is the codling moth, which punctures the fruit in its immature state, leaving an egg in the tender skin, and during the growth of the fruit the worm eats its way into the very core, producing such a deformity and imperfection in the fruit as to make it quite unsaleable and oftentimes unfit for use. Much of the injury of this worm may, I think, be prevented by the pasturing of our orchards with sheep, which would eat up all the dead fruit as it fell, thereby destroying the worm and preventing a succeeding generation. Sheep husbandry also of itself I deem a profitable branch of agriculture, as well as a profitable aid to fruit growing.

In treating upon the different subjects which I have but merely hinted at in this short essay, I have not had in view an idea of presenting anything new to any of the members of the Pomological Society, but if by any laudable means I may aid and encourage others in the adoption of that system of agriculture which is the most promotive of peace, pleasure and profit, I shall be a joint sharer with you in those many blessings which are constantly being shed upon His dependent children by our Heavenly Father.

The PRESIDENT. There are several important questions which may profitably be considered in connection with the subject presented, one of the principal of which is: Can fruit growing be *profitably* conducted in connection with general farming? Another very suggestive question is: Which is the most profitable, raising fruit for market, or growing common farm crops and keeping domestic animals? These are subjects which may be discussed this afternoon, and which admit of a wide range of views, and they are questions that may come home to some farmers following the higher methods of cultivation. We know

there are many fruit growers present who are also engaged in farming, and we wish to fill the remainder of the afternoon with a discussion of these topics. We are very happy to see that there are present a goodly number of members of the Winthrop Farmers' Club, and we hope that they will participate freely in this discussion.

Mr. J. R. NELSON of Winthrop. I think the best address that I have ever heard upon the subject of fruit growing, is the one we have listened to this afternoon from Dr. True. As we look over our State, we see the fruit interests are coming up very fast, and our friend Andrews has told us that there are 10,000 trees set out in this town and doing well. Now I would ask if those who have set those trees are not pursuing the course that Dr. True laid down? As far as I am concerned, I am and always have been decidedly interested in fruit growing. These apples exhibited here are grown very nicely for this year, and are very different from apples grown on trees that are starved to death. The paper presented by Mr. Smith contains some excellent suggestions. He has a large number of trees, and he can tell better by far than the average farmer about the profits of the business. A large number of his trees have been treated in the manner indicated by Dr. True in his lecture this afternoon. That point should be strongly impressed on the mind of every man. How many orchards are there from five to twenty years old that do not receive the necessary care, and are not half manured to grow fruit successfully? A man must feed his trees. Our fruits in this village and in every other village, are better than the fruits on average farms,—and why? Because they receive more care and culture, thus giving us a notable illustration of the difference between fruit which receives care, and that which does not. If a man has the means and time at command and wishes to set an orchard, and will cultivate it properly after it is set, he may reasonably expect good results as rewards of his efforts. I am afraid, Mr. President, that a large number of the trees which are being set out in the town of Winthrop are being lost for the want of sufficient cultivation. Dr. True has told us one cord of manure should be applied to each tree, but I do not understand that a cord is enough for a tree for life. If you eat dinner to-day it is no reason why you will not require dinner to-morrow; and I am fearful that a great many persons who set out their 500 trees, have not the 500 cords of manure for them. I think there are some trees that cannot be induced to produce better by cultivation. I have some that never

have produced much fruit, and I have never fully understood why they should not do so. I would really like to hear the opinions of the fruit growers here, some of whom have had experience with trees for the last twenty years, as to what the results have been. I do not think it right for us to go away without making an effort to consider the question, and consider it well.

Dr. TRUE. I wish some farmer here who has had large experience with apple trees, would give us his opinion in regard to the quantity of manure necessary to a tree, and the production from the tree thus treated.

The PRESIDENT. I will call upon Mr. Smith of Monmouth, to give us this information.

Mr. SMITH. I have an old orchard of about two acres in this town, the trees of which are grafted with standard varieties of apples. When I bought the farm on which this orchard stands, about fifteen years ago, it was in a very low condition, owing to the treatment it had received. I think I have added to that orchard, within the last twelve years, thirty or forty cords of manure, and perhaps twice that amount, and also more than one hundred bushels of ashes and more than twenty tons of mulching. I brought out a broad green leaf, and I presume if you had cut into one of those trees fifteen years ago you could not have counted the fibres, they were so close together, but that they might be distinctly seen now. It has borne very well and I have sold a great deal of fruit from it. The trees are now in good condition, and I will say that for the last two years I have considered that orchard, or the produce of it, equal to the profits of my hay, and I cut twenty tons of good hay. Now others can do as well as I can. If I were to be taken from that farm and placed on a farm where there was no orchard, I should feel very much as Adam did when turned out of Eden. I should expect to get my living by the sweat of my face.

Mr. VARNEY. I did not quite understand the idea of Dr. True in relation to the one cord of manure to a tree.

Dr. TRUE. I was a little afraid I might be misunderstood. I will put the question to you, Mr. Varney; will one cord of manure once in three years do? Perhaps it would be well to put it in the form of a practical question, as it is a practical question, and one that will apply all over our State, where there are old orchards: Is it best to use such large quantities of manure or not?

THE PRESIDENT. Such questions are very much to the point, and another one which is suggested right here, is, Whether there is any profit in growing fruit for the market? I think a man should manure his orchards to the extent of his means, or as far as circumstances will allow him to do so. I was talking with a prominent fruit grower in my own town a few days since in relation to an orchard which he formerly owned and which bore abundantly, and which had since fallen into other hands and been neglected. I inquired of him whether it had run down under the slack treatment, and in reply he said that it had, very much. Speaking of the value of manure, he said that he had known one-half cord of manure to produce more than \$20 in apples raised from the tree to which the manure was applied. Now that in part answers your question, and is proof of the necessity of high cultivation; and I think that this is a subject on which there cannot be too much said. I will call on Mr. Atherton of Hallowell.

MR. ATHERTON. I am only a young man, and I think there are persons here who have probably had more experience in orcharding than I have, but this subject is one that interests me very much. Not long since I was in Vassalboro' on business, and was stopping with a prominent and well-informed citizen. While at dinner, the subject of fruit-growing was introduced and discussed at some length. Speaking of apples in Massachusetts, he said they did not pay for their culture and care. Now this is a serious question,—Whether we shall put our money into orchards or not, and could we not invest it otherwise to better advantage? I was very happy to listen to the address by Dr. True, this afternoon, although there were some things mentioned by him which are rather discouraging to us, who cannot get the \$1000 which he spoke of as necessary to start an orchard. If a man has the thousand dollars to invest in the enterprise, of course it is well enough, but if he does not have it, it seems to me that he may start an orchard on a cheaper scale with \$500 or perhaps even with \$100. I know of two young men who started some time ago; their father told them if they would take a piece of ground and take good care of it, that he would buy for them one hundred trees apiece. They took a piece of ground that did not produce five hundred pounds of hay, and turned it over; this was in the fall; early in the spring the father bought the trees, and they were set out, I think about twenty by thirty feet apart; they were well

manured, and grew finely, and a fine little orchard was started at comparatively small expense. So you see that what the Doctor told us about the \$1000 is not absolutely necessary. I think if your trees are healthy and you have plenty of manure, that is all you need. I don't doubt that there are many orchards that are starved to death, and a good many that are served nearly as badly by being half-starved. In regard to what the Doctor said about the soil being changed, and making new soil, I do not know, but in our experience we have had a good many old trees die. I have set out a considerable number of trees and have had good success with them—found no trouble at all only give them mulching enough and take care of them. I have heard of such a thing as giving too much care to trees, but I do not know in regard to this.

Mr. ANDREWS. I wish to say a few words in regard to the cultivation of the trees in Monmouth. Our trees are well set, so far as I know. In reference to my own, they grow vigorously and as fast as I desire them to grow, or as it would be healthy for them. A man must put his time and care to such things and take pains. If he is a farmer he expects to spend his time on his farm; it is not expected that he will spend it at a store but on his farm, and if he takes an interest in all things connected with farming he will probably succeed. Now I know that the trees set out in this town will succeed, from the attention that is being paid to them. It is of no use to set out your trees and then leave them to their fate; you must apply something and continue it; if you cannot put on as much dressing as you would like to, put on what you can, if it is but a bushel; it is the easiest thing in the world if you only say you will.

Mr. HOWARD of Winthrop. I don't know as I have anything to say. Our trees were attacked by caterpillars year before last, and last year. I have labored to prevent the ravages of the caterpillar, and think I have succeeded quite well. Now the question before this convention as I understand it, is raising of fruit in connection with farming. Some of our friends have given us a description of the fruit raised in their gardens where they had the best possible chance to take care of it; we do not doubt them in the least. They have asserted considerable in relation to the richness of the ground, which we believe to be all very true, but we do not wish to discourage any man. If he cannot have an orchard to his taste at first, the only way is to continue trying. We believe it is a worthy object to raise fruit, but the idea has

been advanced by many that they can raise it without culture. I think there are ways of raising fruit in connection with farming, that may be made profitable. I think it has been proved that trees can be raised without going to a very great expense. There are men who have raised fruit in this State at less expense than Dr. True's process requires, and it can be done again. I would urge every man to set out trees, carefully grown, in a good, thrifty, growing condition, and I have no doubt that they will do well. If you raise fruit not suitable to be consumed upon your table, give it to your stock. I know it is not popular now, but I do not believe in the principle of the old lady, who said she was glad caterpillars were on the trees, as she thought it would prevent the making of cider; and she said she would pray for them to come upon us another year. I believe that you can use apples to advantage in feeding them to your stock. If I had a thousand barrels of apples in my cellar, I would use them profitably with the stock I have. Now, people may not believe a great deal in feeding out apples to stock, but there is more in it than is generally supposed. They are certainly worth ten cents a bushel to feed to cows, and if they are worth that, every man can raise fruit enough to make it profitable to feed, if he cannot compete with the West in the markets; and I think every man can do so without resorting to the expensive mode which Dr. True and Mr. Smith have described. Just select a good locality for your orchards, set your trees out in a right manner, and they will be all right if properly cared for. I should prefer Maine trees. Dig good sized holes and fill partly up with firm soil, set your trees and carefully tend them, and you may raise an orchard and raise fruit. I think in nine cases out of ten, that system properly carried out will succeed, and at a less cost than one-tenth of the expense mentioned by Dr. True. And when he has succeeded, the question comes up, what shall he do with the fruit? how shall he dispose of it? Why, give it to the stock, every spare apple that he has—and sir, I look upon this as a very profitable question to every man who intends to live by farming. Attend to it carefully, and in the end it will surely pay.

Mr. METCALF of Monmouth. I did not improve the privilege of being present this afternoon and hearing what Dr. True presented; but from what I have heard I think he has entertained you very well. I believe these gentlemen have been looking at the subject of fruit raising in Maine. I believe it to be a subject worthy of

much consideration, and very fitting on the present occasion. We have here before us an exhibition of fruit that has survived thus far—well into the middle of the winter, and every specimen is in good condition, while car loads of fruit coming from the West, have rotted long before this time. I am not going to say much now—just a thought or two. I think we have encouragement in the State of Maine, to plant orchards, and take care of them after they are planted. I think that if you would have choice fruit, you must of necessity put on from a cord to a cord and a half of dressing. I think that the State of Maine is one of the finest portions of the Union for fruit culture, and apples especially. In relation to making cider, I believe in it. I think we should have plenty of cider, so that we can have good, pure vinegar, instead of the poor, filthy stuff we sometimes get.

Dr. TRUE. I do not fully understand the situation of things. It seems to me that a wrong impression has been given. I remarked, I think, after giving my ideal, that we could not expect to raise an orchard without cultivation, and I consider that a good practical standard for a farmer. I took my ideal from what I actually saw in the State of New York, where I visited some time since. A gentleman whom I visited there, has an orchard which is now eight years old, and I never saw better trees in my life. Last year many of them had from a bushel to a barrel of apples upon them, and almost all of them were bearing, and now you could not buy one of those trees for \$50.

In setting out an orchard, a man wants first, a good plat of land and well selected trees, and he also wants them set in a proper manner, and if well cared for, mulched and manured, they will do well. You, Mr. President, know the character of the soil in Oxford county; you know how we have to work to raise an orchard. I have seen trees in some parts of the State growing finely almost without any exertion on the part of the owner, and if I could have the same kind of soil at home to plant an orchard on, I would like it very much; but we have to work every way or our trees will starve to death, because the soil does not contain the elements so necessary to the growth of apples. In the towns around here you have soil containing every necessary attribute that is needed, and trees will grow almost spontaneously, and you can raise apples without any great degree of culture; but of course culture is better. I intend to plant two acres to trees in

the spring. I spent two weeks with my boys taking out the rocks; another spring I am going to plant the trees, and if I live long enough to see them grow, I shall graft them. But let us remember above all other things in connection with fruit growing, that we must not let our trees starve to death.

Mr. METCALF. You see that Dr. True is prepared to defend himself and what he has presented, and I have found him during my acquaintance with him to be pretty correct and generally able to prove his assertions.

Mr. HOWARD. I would advise every man to try to raise some fruit, if nothing more than enough for his family, but the raising of fruit in connection with farming must be upon the consideration that it will pay well. When we look into the subject fully we shall see that we must raise it upon a system less expensive than that mentioned by Dr. True.

Dr. TRUE. What did you get for apples last year?

Mr. HOWARD. I did not have many apples.

The PRESIDENT. Gentlemen, do not let us be frightened at the production of apples in the West; do not let that intimidate you or keep you from planting trees. To-day such apples as you see before you will bring in the market \$3.00 a barrel, if sold rightly, and car load after car load of apples from the West have been sold for \$1.50 a barrel, while some of them sold as low as \$1.00 and some as high as \$2.50. A gentleman whom I recollect, sold six hundred bushels of apples as fast as he could label the barrels for \$3.00 a barrel. Don't be frightened by the Western fruits; it is a blessing that we have them in such a fall and winter as this. We should be almost destitute of fruit to-day had it not been for the supply that we received from abroad at low prices; while such fruit as you see before you is bringing a liberal price.

Mr. CARR. It seems to me that this subject has not been fairly treated this afternoon. There has been considerable discussion as to whether a cord of manure is too much for a tree. I do not think it is,—and where is the man who does think so? Mr. Smith has told us that he moved from Winthrop, from a farm on which there is an orchard which I consider to be a very fine one indeed, and I do not know what induced him to leave it. My friend from Winthrop, the President of the West Winthrop Farmers' Club, has told us plainly that he was no orchardist, which may be true, but he can raise good stock and is a good farmer. The gentleman from Hallowell has told us what he and his brother have done

there. Now if they had adopted Dr. True's method and carried it out, they would have been better off,—they would have got heavy crops of apples.

Speaking about Western fruit, the fact is we can raise our fruit in Maine for what it costs us for freight from the West. The freight amounts to from 80 cents to \$1.00 per barrel, and I think we can raise apples at a less cost than that.

One gentleman has spoken about feeding apples to stock. It is well enough if apples are unfit for any other use, but I think that a farmer who takes care of his trees, and raises good fruit, can find a better use for it than that. If a man shakes his trees he must expect his apples to be bruised and hurt. I will say that there are no apples on these tables that were shaken from the trees; they were picked, and picked carefully. I am a believer in good apples, well grown and gathered in a careful manner. I believe fruit raising is the most profitable of anything you can do on the farm,—and in my opinion the more dressing you use the better.

A MEMBER. Mr. Carr is perfectly right, I think; I agree with him entirely. In relation to carrying on orcharding and general farming together, I do not think we can do both successfully. I think we must give our undivided attention to orcharding and let other matters go, or if we wish to follow general farming it is better not to try to do much at raising fruits.

MR. SAWYER. I regard the suggestion made by Mr. Carr in relation to the careful gathering and handling of fruit as of great importance, and as pertinent to this as it is to every other discussion upon the subject of fruit growing. With good fruit, careful handling turns the scale between profit and loss. The larger portion of the fruit brought into this State last fall from Massachusetts and New Hampshire was gathered in the most careless manner, and transported in bulk without being assorted, and was received in a bruised and soiled condition; and although it was sold at a very low price it brought all it was worth. These apples were mostly Baldwins, and but few of them have been kept to the present time, while apples of the same variety grown by our own orchardists and properly handled are now in prime condition. I have in mind at this moment two men in my own county whose practice well illustrates the importance of the careful handling of fruit. One of them (who is also largely engaged in fish-breeding) raised some 500 bushels of apples last season, the larger portion

of which were Baldwins and are now in his cellars in good condition, and will be marketed in the spring at paying prices. The other man to whom I refer, living in my own town, raises large quantities of early apples, which he sells readily at good prices in competition with the early fruit brought in from other States; and he considers it more profitable than winter fruit, by reason of more prompt returns and the saving of subsequent labor. The reason of his ready sales is that his fruit is gathered properly and at the right time, honestly assorted and put upon the market without being bruised or soiled. Purchasers do not hesitate to take such fruit in preference to that brought from abroad at the same season. Both of these men, as well as many others who might be mentioned, are engaged in "general farming," and make everything pay.

In view of numerous examples of this kind as well as upon general principles, I believe that any person who pursues his business with intelligence, industry and skill, may profitably combine fruit growing with general farming,—and I have written a resolution embodying that belief, which I will present, as follows:

Resolved, That fruit-growing may be successfully followed in this State in connection with general farming.

The resolution was adopted.

Adjourned.

WEDNESDAY EVENING.—CLOSING SESSION.

The Society having re-assembled at 7 o'clock P. M.:

The first business of the evening was the report of the Committee on

MAINE FRUITS AT THE CENTENNIAL.

Rev. J. A. VARNEY of North Vassalboro'. It is proper for me to preface this report by saying that when it became known that no successful effort had been made to represent the agricultural interests of Maine at the Centennial Exhibition, the officers of this Society decided to make an exhibition of Maine Fruits there immediately after our annual exhibition at Waterville; and accordingly the President and myself were appointed to make a selection of fruits for that purpose and to proceed to exhibit the same at Philadelphia.

Mr. Varney, in behalf of the Committee, then presented the following

REPORT.

In making a report of the exhibition of Maine Fruits at the International Exhibition at Philadelphia, I am not a little puzzled to know how to proceed. Indeed, it were easier to write a paper concerning what we did not exhibit, than otherwise. It was, in my opinion, a misguided step on the part of the people of this grand old State of Maine, upon whose banner "Dirigo" is emblazoned, that all her products and industries were not fully represented in the great World's Exhibition. And, when it is too late to repair the loss we have sustained, those of the people of our Commonwealth who visited the exhibition, at least, now see that it would have been true economy to have placed abundant means in the hands of our able and judicious Commissioners to enable them to make a fair and full exhibit of all our products and industries. Of what Maine represented there, we can speak only in praise. Of what she did not exhibit, as compared with other States of the Union and the assembled nations of the earth, with humbled pride we leave unsaid, until the next centennial year comes round, when, I trust the younger children of our national household, as Kansas and Colorado, nestled in and around the Rocky Mountains, shall not be permitted to steal away the Motto and the glory of the old Pine Tree State.

Our journey to Philadelphia was commenced on the morning of the 9th of October,—the fruit having been sent forward by express two days before. On the 10th we arrived in the city, and after securing a boarding house, and a good dinner, we proceeded at once to business. It was an easy matter to find our packages of fruit at the Pennsylvania Railroad Depot, and give orders for their speedy transmission to the Centennial Grounds. Quite easy, too, for a stranger to find his own way thither, provided he was prepared to submit to such an unmerciful squeezing and crowding on the street and steam cars as you can never again experience during this mortal life. Long, lank and lean men had the best chance there—and so far, we herewith extend our sincere congratulations to this Society on the wisdom of their selection of delegates to the Centennial. Had you chosen men of aldermanic proportions, I am half persuaded you might have looked in vain for their report at this meeting, and for aught I know, our estimable Secretary

would have been obliged to strike two names from the Pomological Records of Maine. It is surprising to see what numbers of living beings a Philadelphia car conductor is capable of packing into an ordinary car. They leave the station with the car seats comfortably filled, and then take on from one to a dozen at every crossing for the whole four miles. I am fully aware that this was the Centennial year, and facts as well as history tell us that the world has made rapid strides during the last century. I am prepared to believe that steam navigation, railroads, the telegraph, the art of photography, etc., have come into public notice during the last half of the past century, but nothing short of a hundred years is required to teach the art of *car-packing* as they have it.

We proceeded to the head-quarters of our Commissioners, Messrs. C. H. Haskell and Joshua Nye, and throughout our stay in Philadelphia, found them at their post, ever ready to render all needed assistance.

If you appear at the gates as a private citizen you have only to present your ticket and pass on, and so for the first time we paid our entrance fee, and soon "found ourselves lost" amid the wonders of the world. But we must go in and out often, and being entitled to an Exhibitor's Pass we made application for the same at once. Now work begins, and we found that for us,—even here at the Centennial,—it was quite as well to adopt that good old saying, "Let patience have her perfect work." I hope you will not think I am about to find fault with the management of their business affairs. By no means. I will state it once, now, but can well remember that I said it over and over again as we cruised from one department to another. In due time the passes were presented to us, and how our hearts leaped for joy as the suggestion flashed across our anxious minds,—we are triumphant, the last knot has been tied. But alas, how soon the placid waters of our happy spirits become restless and ruffled again with "red tape." On opening the envelope to the long-coveted pass, we find ourselves in another dilemma—as we read: "This ticket not good unless it contains the photograph of the owner."

A short journey now to the photograph gallery within the grounds, there to learn, after waiting some two hours, that in the course of a week or so our turn would come, when for one dollar each they would be prepared to place a correct likeness of our homely faces in the little aperture fitted for its reception within the paper. Two ugly faces (pardon me, Mr. President) in two

small apertures, in the two passes, for two dollars, in about two weeks. Again somebody muttered—"red tape."

What a blessing, when among strangers in a strange city, to have the companionship of one that knows more than you do. My friend suggests, that as we may go out at the gates *ad libitum*, we may procure the needed photographs in the city for one-half the money, and so save one dollar to help out in *doing* Philadelphia. We followed his suggestion—but "oh my!" such a face as was to be seen in one of those passes!

Our worthy Secretary requested me to "report all that I saw and learned at the Centennial, only withholding such things as would not be proper for me to relate,"—a very important desideratum, I can assure you. How very fortunate this Society may consider itself to have such accurate discernment combined with the unusual readiness of the pen, to jot down its doings. Well, this together with certain orders from one high in authority among us, whose pomological mandates, like the laws of the Medes and Persians, are not to be disregarded, leaves me to make the humble effort to tell you of some things I saw and learned.

It would be a task too burdensome to go into detail, and as tedious as the nightly waiting at the Belmont Avenue Depot for a car-ride to Market Street. "Quicker home to go on foot," and more endurable doubtless for you to procure snow-shoes and strike out for your homes. We were inclined to complain of friends visiting the Centennial, because they gave us no more definite accounts and descriptions of what they saw there, but once there you may comprehend the situation. One week, a month even would be little time enough to record the names only of the subjects and interests represented there. From the Old World and from the Isles of the Sea came samples of wood, almost numberless, with men to tell us all about their uses and value. California and Michigan were there, too, to show us the tall pines they grow, and the sleds, all loaded, on which they draw them from the forests—as though a man from Maine had never seen a pine tree, or a bob-sled! Well, the fault was not theirs, if fault was anywhere. This was as it should be. In the Pomological Building were large displays of potatoes, some of which we thought were grown on exceedingly poor soil, and in a dry season at that. We could have selected samples larger and fairer on exhibition at our State Fair at Waterville; but we did not do it. So it was with many other things I must not enumer-

ate, we were sorry, yes ashamed, to find missing from among the multitude of men and things on exhibition there. I did not say there were no women and children there. On the contrary, like the potatoes and apples, there were all sorts, all colors and sizes,—on foot and on wheels, with canes and umbrellas, and without,—protected and unprotected; and if we may judge from a two-weeks' jamming experience in Philadelphia, he was a lucky man who had neither of these under his immediate protection.

Through the kindness of the gentlemanly janitor, Mr. Brackett of Iowa, we secured the table we desired, in a central location. The fruit came out of the packages in fine order, very few specimens having suffered from the previous handling and the journey from Waterville. The space allotted us was ample, and we wished we had forwarded a larger quantity.

Our first work was to put the fruit in order and arrange it to show to the best advantage. This done, and the large placards on which we caused to be printed the words "Maine Fruits," placed over the table so that they might be seen from any portion of the building, we were now ready for the inspection of the Fruit Judges.

Whatever complaints may have been made as to the inefficiency of the judges in other departments, the fruit department was favored with experts, who performed their arduous duties faithfully. Our fruit received high commendations at the time of their examination, and we have since been notified that it was awarded a diploma and a medal.

Well, as we stood and looked across the table, we said, as did the Commissioners also, "We are glad this fruit is shown here." I need not say to you who have seen such a table of fruit on exhibition, that it was indeed beautiful. Notwithstanding the impromptu manner in which the enterprise was set on foot and carried out, it was a success. We received the congratulations of the Commissioners, as well as of many prominent fruit judges and fruit growers from different portions of the country. All acknowledged that ours was a creditable show of fruit. We found, too, that the impression prevailed quite generally, in other States, that we could not grow good fruit, because of our close proximity to the Arctic regions. A few plates of pears and about one hundred and fifty varieties of apples comprised our list. Here I wish to remark, that the tables in Pomological Hall were poorly arranged, being constructed with three stories or shelves

rising one above another toward the centre, thus showing three tiers of plates from each side. So that in order to get a full view of all the specimens of fruit on each table, you must walk entirely around it. Then, in taking a general survey of the hall, only the upper tiers were to be seen. This objection was obviated, however, when the fruit was removed to Agricultural Hall, (as it was after a few days, to make room for the World's Poultry Show,) in the use of level tables constructed in the same form as those adopted by this Society in its annual exhibitions. Amid the confusion, so general, I found it very difficult to keep my mind or eyes upon any one thing long enough to take such notes as might be useful to myself or of interest to others. I am thinking others sometimes got mixed somewhat, as I recall the result of certain note-taking one day. Some one suggested, (I don't propose to call any names here,) that we devote the morning to taking notes on the fruit exhibited in the Pomological building. With note-book and pencil we set about the work. I think it safe to say, that scarcely fifteen minutes had passed before some one called my attention to a "magnificent pumpkin" on a table near at hand. The pumpkin (fruit) and a big squash gone over,—“and these potatoes,”—“Why, sir, a Lewiston grocer (Lewiston is in Androscoggin county) would not look at such a second time.” Then “Here is some Oregon wheat,” from four to six feet in height, the kernel plump, white and nearly as large as Rio coffee. Then another table loaded with vegetables and fruit. Now, all I remember distinctly about this table is the fact that on it were some very fine Italian chestnuts in the burr. Chestnut burrs are ugly to the fingers. If this variety of chestnuts are generally as large and fair and good as those we saw, I sincerely hope the seed may come true to name. I have had only a limited experience in raising chestnuts, and these only *horse chestnuts*,—but I am always in doubt about apple seeds, and *New York apple trees* as well, because you can't tell what the fruit may be till you see it, or taste it. Now in referring to my note-book, the only nameable things I find recorded on that morning, are the number and varieties of apples, pears, plums, peaches, grapes, &c., said to be contained in the Michigan contribution, and something about some magnificent Italian chestnuts seen on another table. Before dismissing this part of my subject, I desire again to express the hope that Italian chestnuts, when planted, are sure to vegetate, prove hardy, and are certain to reproduce Italian chestnuts. If my companion

did more, I trust we shall be favored with a full report of that morning's labor.

Let us spend a few minutes among the fruit. Near by was the North Carolina contribution, principally apples, to which was added samples of leaf tobacco, Dent corn, &c.—shown by as perfect a specimen of North Carolina humanity as that State could produce. A “right smart” talker, however, and he was in nowise backward in his denunciations of the “powerful weak” accommodations devoted to Pomology at the Centennial. He was quite liberal however, and it was with one of those improved Centennial bows that we acknowledged our obligations as he presented us with two of those huge ears of Dent corn. (We placed them very carefully in a packing box under our table, and they remain there yet for aught I know.) North Carolina apples are much larger than ours, but not as large as those grown in some other States. They were soft and spongy, and many of them nearly covered with a dingy scurf or mold. “This,” said our friend, “is unusual, being caused, I reckon, by a heap of rain immediately followed by right smart heat.” Here, as in many specimens of Western and Southern fruit, we found it quite difficult to identify species. A Baldwin, for instance, grown no farther away than the State of Michigan, is so unlike the Baldwin of Massachusetts or Maine that close inspection is necessary to name it. At this time, their Baldwins and Northern Spys were easily indented with thumb and finger, while ours, as you all know, were hard and firm.

California, Oregon, Kansas and Colorado take the lead in great crops of the largest fruit. They tell us of apples and pears weighing $2\frac{1}{2}$ pounds, but I saw none on exhibition that would outweigh our largest samples by more than one-third, say $1\frac{1}{2}$ pounds. All of these lack the high coloring of Maine apples, are less firm, and though in their season may be equal in flavor, yet are coarser grained and of less value in respect to keeping qualities.

Kansas and Colorado expended thousands of dollars in the exhibition of fruit here, to say nothing of their magnificent show of cereals, minerals, &c. In the centre of their State building stood a monument of apples, tastefully arranged, containing many barrels of fruit. A fresh supply was kept constantly on hand or on the way thither, to take the place of any that showed signs of decay.

Michigan claims to be the banner apple State. Mr. Ilgenfritz, representative of the State Agricultural and Pomological Societies of Michigan, informed me that they had placed on exhibition 250 varieties of apples, 60 of pears, 22 of grapes, 30 of peaches, and 19 of plums. They made a splendid show, occupying several tables loaded down with fruit. A correspondent of the *Country Gentleman* is of the opinion that the apple crop of Michigan is of more commercial importance, as compared with other farm products, than is the case in any other State. He also asserts that the Michigan Pomological Society is composed mainly of the very best class of farmers,—men of more than ordinary ability and education,—and that as a Society, they are earnestly and intelligently working to develop the fruit growing interests of their State. Another significant fact is, that they have the coöperation of the Legislature and State government to a larger degree than is received by any other State Society of the kind. Their annual Pomological reports are volumes of 500 to 600 pages, published at the expense of the State,—and besides, an appropriation is made to defray the expenses of the officers of the Society. Mr. Ilgenfritz informed us that the State appropriated \$5000.00 to defray the expenses of their exhibition of fruits at Philadelphia, and that they should nearly or quite double this expenditure. Two full car loads of fruit were taken to the Centennial from that State after the time of the general pomological exhibits in September. As it is, we are inclined to accord to Michigan the honor of being the Banner Apple State. Why should we not do so? Let no Maine man say it is all because they have a milder climate, or a more congenial soil for fruit culture, for we are not inclined to yield this point at present. They have in Michigan as cold weather as we ever have—the mercury running down to 35° and 40° below zero. They have their winter killing seasons, the pear blight, the borer, the canker worm, the caterpillar and the curculio as well as we. Their apples will average a little larger than our own, and their crops may be heavier, but considering our locality, it being easy of access to market, both home and foreign, the high coloring, sprightly flavor and good keeping qualities of Maine fruit, we believe that better returns are realized for the labor bestowed and the money judiciously invested, than is realized in any Western or Southern State.

The collection of apples from Nova Scotia was a very creditable one,—shown by Mr. Robert W. Starr and his wife, of Cornwallis,—

and was, to my mind, the only one that in all respects equalled the Maine apples. These were good, sound, smooth, nicely colored apples, susceptible of high polish, and in every sense first-class fruit. In this collection alone were found well grown specimens of the Blue Pearmain equal in size to ours. The Gravenstein and Yellow Bellflower (persistently called by them Bishop Pippin) excelled ours.

From Quebec was a large collection of apples, many of which were seedlings, such as we consign to the cider-mill.

The exhibition of fruit from Ontario had been long on the tables, and hence was stale, so that we could not judge of its merits.

I was disappointed in the show of fruit from Minnesota. It was but little more than half the size of our samples. Pennsylvania too, was scarcely up to our standard in size, and made but little effort to display fruit. Iowa had a fine collection of artificial fruits. These were all of wax, in natural colors, and if they were fair representatives, I judge that Iowa produces good fruit. Perfection of outline, enormous size and high colors are more easily attained in wax than grown upon trees. We were not favored with any New York fruit at this time,—neither from any New England State save our own. There were most excellent samples of evaporated fruits on exhibition, of which, in the absence of a proper knowledge of the methods of preparing, and the profits of the business, I can say nothing—except that the idea would appear to force itself upon us, that here is an opportunity for the profitable consumption of our surplus fruits in the over-bearing years. Some of us have been faint-hearted, when we have looked out upon the bountiful harvest, and ready to cry out, “the business is overdone—it will not pay.” Perhaps, with these new processes of preparing fruit so that it will keep in perfection an indefinite length of time, richer harvests await us. There need be no fear of overdoing the fruit raising of Maine. In some portions of this State the crop of apples was entirely cut off the past year, but prices ruled low on account of the enormous crops raised in Massachusetts and farther West.

It is a singular occurrence, when in the markets of Maine a barrel of apples may be bought for the price of two bushels of potatoes, or less. Notwithstanding the extremely low prices of apples in the month of October, good winter fruit has brought \$1.00 per bushel since the middle of December. Let us, then, seek to grow such varieties as shall meet the demand in our

several localities. Where early fruit finds ready sale at remunerative prices, there plant or graft with such. In localities where early fruit is unsaleable, grow for winter and spring sales.

Too often and too long have our orchardists and gardeners been guided in their selection of varieties by the pretty fruit lithographs shown by the smooth-tongued tree jockey, rather than by good sound judgment and common sense. I shall not soon forget a remark made at a meeting of the Board of Agriculture at Winthrop, by a gentleman of that town. Though spoken, I believe, in reference to another subject, it is equally applicable here, and to the point. This is it: "The people of Maine are the most *gullible* people in the world." Especially is this remark true, if I interpret the word *gullible* correctly, in our selection of fruit trees, and varieties of the same. Occasionally we may have obtained that which was desirable,—as often by mistake, perhaps, as otherwise. In our fruit catalogue we are outspoken and explicit in our opinions with regard to the varieties of fruit best adapted to our climate. Let us be as plain and explicit with regard to the kind of trees we can recommend to grow such fruit upon. I wish to place myself upon record here. Buy only Maine grown trees, if they can be obtained; if not, order directly from some reliable nurseryman as near home as possible. Let no travelling tree pedler receive your order, for however honest he may be, he seldom or never knows what he sells you, or where his trees are grown even. If I were to start a new orchard, I would use, principally, seedling trees that had been once or twice transplanted in the nursery where they were grown, and graft in the stock or top when well established. I say *principally*, because there are a few varieties that will succeed quite as well grafted at the root, in this climate, and *only* a few.

I ought to say before closing, that the grape exhibit from several States occupied a prominent place. It was too late for plums and peaches except as canned or preserved.

The Horticultural department, though confessedly meagre at the time of our visit, affords too wide a field for me to enter upon in this report. Horticultural Hall is a magnificent building, and is to remain a permanent fixture in Fairmount Park. In the out-door exhibit were to be seen the representative trees of this and many foreign countries. Here too, were the remains of different methods of ornamental and flower gardening, which were still objects of beauty and interest, though disfigured somewhat by early

frosts. I wish to remark here, that in the parterre, or sunken garden leading out from the west end of Horticultural Hall, some of the most beautiful and attractive gardens or beds were composed of common varieties of foliage and bedding plants, such as are to be found at any good florist's around home.

To all our farmers and amateur gardeners,—to *all* who possess a small bit of land, or yard, I wish to say that a slight investment even, will well repay you in the effort thus to adorn your homes.

Possibly I may be charged with egotism, in regard to my estimation of the importance and advantages of the fruit growing interests of Maine as compared with other States. With us this enterprise is yet in its infancy, and it only remains for the *few*, yet *earnest*, unselfish workers in our youthful Society, to go forward in their beneficent endeavors until a generous public shall appreciate their efforts. That time will surely come.

In these semi-annual meetings,—as yet but thinly attended,—seed is being strewn on soil that cannot fail to yield a good harvest in due time.

After the reading of the report, THE PRESIDENT, who was associated with Mr. Varney on the Committee, made the following remarks :

As a few minutes yet remain, I wish to add a few words to the report to which you have listened, upon one or two points to which the speaker did not allude. One object we had in view, and one of the lessons we set out to learn, was the art of exhibiting. We intended to study the methods of exhibiting fruit, that we might thereby be enabled to improve upon what we had learned at home in our exhibitions. This was kept prominently in view while there. I think I may say without egotism that we did not learn anything in that respect while there, by which we could profit, unless it was what we learned negatively, for we did learn "how not to do it" in several respects. We did not find so attractively arranged an exhibit of fruit as we are in the habit of making at our exhibitions. I do not say this to claim credit to ourselves, but we expected to find something that we might learn from, and in that respect we were disappointed. The arrangement was bad, and the hall was exceedingly bad, and received the condemnation of all fruit growers. The tables were bad. We all know that a display of pictures in an exhibition has no effect in an uncouth hall, and in this exhibition, held in a rough building erected on the grounds at slight cost, all artistic effect was lost.

All the merit of the art was hidden by the uncouth surroundings. The arrangement in an exhibition of fruits and flowers is one of the fine arts, so to speak, and its effect on the mind depends much on the surroundings. These surroundings were out of place. In the paper presented this forenoon upon landscape gardening, the point was made that certain things should not be in proximity to certain other things. The vegetable garden should not be upon the lawn, but in some out-of-the-way place. So cabbages and potatoes should not be exhibited in immediate connection with fruit. Good taste can be manifested, as we see upon the tables before us, in the exhibition of flowers with fruit, but never of coarse articles.

One remark also in regard to the efforts of Michigan to show her fruits in the East. Now we ought to copy from Michigan in one direction—we ought to possess some of her enthusiasm. Much of the enthusiasm of Michigan was transported from Maine. Many men did we find who took pride in exhibiting her fruits. They are aware that the success of fruit growing in their State depends on an Eastern market, and therefore they are anxious to make a favorable impression on Eastern people, that the markets may be open to their fruits. Hence they run their exhibition, so to speak, regardless of cost. They cared not that the State appropriated only \$5,000 to sustain it, they went on with the sanction of the State officers, until they had then exceeded a cost of \$10,000. Will they not be rewarded? Will not those men who went to Michigan from Maine, now that an Eastern market is made for their fruits, reap a reward for such efforts? In common Yankee parlance, "won't it pay?" Of course it will. And if we exercise the activity that they do in growing their fruits and the perseverance that they do in seeking a market, would it not pay us? I think the answer, "yes," is the one that applies to us in our favorable position. Their Pomological Society holds its exhibition in connection with the State Agricultural Society, and the State Society gives them a certain amount of money annually for their part of the exhibition. They give them \$1,500 a year generally. That is the encouragement which they give to Pomology there. They recognize its pre-eminent importance. One of your prominent fruit growers said here to-day that Kennebec county, so long famous for its fruits, is not producing so many barrels of marketable fruit as she was twenty years ago—not because of the accidents of the two years past, but because your trees are not sufficient to produce as many apples as were produced twenty years

ago. The questions arise: Are you planting sufficiently? Are you making such improvements as are demanded by the circumstances and the possibilities within your reach? I say you are not.

REPORT OF THE COMMITTEE ON THE EXHIBITION OF FRUITS AT THE WINTER MEETING.

[Owing to the temporary indisposition of Mr. Smith, the Chairman of the Committee, this report was read by M. J. Metcalf, Esq., of Monmouth, who, in presenting it, called attention to the high character and fine condition of the fruit exhibited, with reference to size, color, texture, soundness and freshness of appearance,—challenging comparison as a *winter* exhibition with the fruits of any other region; and invited the members to test its qualities at a social re-union which was to be held at the close of the session —SEC]

The Committee appointed at the Winter Meeting of the Maine State Pomological Society, held at Monmouth, January 23d and 24th, 1877, to examine and report on the fruit on exhibition at that meeting, submit the following report:

Your Committee were very much pleased to find on exhibition sixty-seven plates of fruit, viz: two of cranberries, three of grapes, two of pears, and sixty of apples. Each of the latter contained ten or more specimens of very fine apples, highly commendable in quality, size and color, and the most of them eminently adapted to the soil and climate of central Maine.

George H. Andrews of Monmouth presented some very excellent specimens, showing intelligent cultivation, viz: Roxbury Russet, (the fairest and best we have ever seen on exhibition,) Black Oxford, Yellow Bellflower, Baldwin, Pound Sweet, Red Canada, and seedlings for name—all perfect specimens; also some specimens of Isabella grapes, very good for the season.

J. O. Preble of Monmouth presented Rhode Island Greenings, Red Canada, and seedlings not named; all very good.

J. L. Perry of Litchfield, two plates of apples, (unnamed varieties, of very good quality.)

Some fine specimens of Baldwins and Yellow Bellflowers were presented by David Woodbury of Monmouth.

H. W. Tilton of Monmouth exhibited one plate of large, well-ripened Baldwins, showing good culture—symmetrical in form and very highly colored.

L. F. Starrett of Warren exhibited a variety of the Greening class, for a name, of good form, rather above medium size, of fair quality, somewhat resembling the Rhode Island Greening.

Wm. H. Boynton of Monmouth, one plate of very good Baldwins, also a variety for name.

Charles S. Pope of Manchester, four varieties, viz : Waldower, Red Canada, Starkey and Mother apple, all very fine specimens.

Joseph Taylor of Belgrade exhibited very fine specimens of Northern Spy, (the largest and best of that variety on the table,) also some very good specimens of Childs apple, Esopus Spitzenburg, Hubbardston Nonsuch, and two plates not named.

J. W. Foss of Monmouth presented one plate of very good Hubbardston Nonsuch.

N. F. Prescott of Monmouth, Roxbury Russets and Baldwins, all fine looking specimens.

Hiram G. Judkins of Monmouth, very excellent specimens of Hubbardston Nonsuch and Nodhead.

Francis A. Fuller of East Winthrop exhibited good specimens of Black Oxford and Esopus Spitzenburg, also some very good specimens of Isabella grapes, well ripened—as your Committee had the privilege of testing them.

M. J. Metcalf of Monmouth presented very good cranberries and grapes.

Mr. Joseph King of North Monmouth presented some very fine specimens of King of Tompkins County, beautiful in color, large and fair; also some very good Spitzenburgs, Black Oxfords, Maiden's Blush, Seek-no-further, Baldwins and Yellow Bellflower.

J. L. Orcutt of North Monmouth presented specimens of two varieties of apples, but your Committee did not get the names. They were very good standard varieties.

Thirteen varieties of apples, two of pears (Vicar of Winkfield and Glout Morceau), and one dish of cranberries, were exhibited by Alfred Smith of Monmouth. The varieties of apples were Northern Spy, Baldwin, Winthrop Greening, Hubbardston Nonsuch, Rhode Island Greening, Roxbury Russet, Red Canada (Old Nonsuch of Massachusetts), Fall Harvey, Talman's Sweet, Nodhead, Red Russet (large, somewhat resembling the Baldwin, but keeps as well as the Roxbury Russet—the tree vigorous, hardy and productive), Yellow Bellflower (an annual bearer, productive, hangs to the tree till gathered, like the crab varieties—tree perfectly hardy and vigorous); also a red winter sweet apple, name unknown, of good quality, probably of English origin, from Vaughan's Nursery, Hallowell. Conspicuous for size, beauty of form and color among Mr. Smith's varieties, was a plate of Nod-

heads, Winthrop Greenings and Baldwins, one of the latter weighing ten and one-half ounces, diameter four inches, circumference one foot.

Your Committee were surprised to see on exhibition so large a display of beautiful winter fruits, it being the largest exhibition ever presented at any winter meeting of the Society, and highly creditable to the exhibitors,—to whom many thanks are due. In consideration of the recent devastating ravages of the caterpillars in this county and vicinity, such an exhibition was a pleasure and surprise, and seemed to animate and revive the drooping courage of fruit growers and orchardists to renewed faith and works, which combined with intelligence, will remove all the obstacles in the way of fruit growing in Maine.

Respectfully submitted.

ALFRED SMITH, F. M. WOODWARD, CHARLES H. JONES,	}	<i>Committee.</i>
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Mr. SMITH spoke briefly of the fruit on exhibition, also of the beneficial influences of the Society, and the efforts by which its membership in Monmouth had been largely increased during the past year, and urged others present to engage in the work,—concluding as follows: “You all love fruit. There is no man but loves fruit. Let us raise such fruit as we see here. No one can afford to raise poor fruit. Let us take a lesson from this fruit. It was raised by men of intelligence. Such fruit cannot be raised except by working intelligently in harmony with the laws of the universe, which are the laws of God.”

The PRESIDENT. This closes the public exercises of the meeting. It is now one of the things of the past, and only the pleasant recollections of it are left behind. I crave your indulgence for all the short-comings I have manifested in the performance of the duties which I have been called upon to perform. I thank you also for the interest and attention manifested.

On motion of Mr. Starrett of Warren, *Voted*, that the thanks of the Society be and hereby are tendered to the Maine Central and Knox and Lincoln Railroad Companies for their liberality in granting free return tickets to persons attending this meeting.

On motion of Mr. Sawyer, *Voted*, that the warmest thanks of the Society are due and are hereby tendered to the citizens of Monmouth for the complete arrangements made for holding this

meeting and for the hospitality with which they have entertained the members during its continuance.

Mr. METCALF. I am not satisfied that the thanks in relation to this session shall be all on one side, and in behalf of this community, and this town, I thank this Society for meeting with us, and for the good which I am sure your meeting will do.

Mr. Metcalf, in behalf of the ladies of Monmouth, then extended an invitation to the members of the Society and others present, to partake of a supper in the vestry of the church immediately after the adjournment of the meeting.

Adjourned.

MISCELLANEOUS PAPERS

PRESENTED AT THE WINTER MEETING AND ORDERED TO BE PRINTED.

APPLES FOR THE MARKET—WHAT VARIETIES SHALL WE RAISE?

BY LYMAN F. ABBOTT OF WILTON.

I do not propose to discuss this subject at much length, but merely to state the result of an experiment adopted by myself last winter to ascertain the views of some of our best orchardists in regard to what are the best ten varieties of apples for general cultivation. The experiment, though not as satisfactory in its results as was hoped, gave an indication of the course which those having experience in fruit-raising are following, and also elicited the opinions, founded upon long experience and wide observation, of those whose intelligent practice in this important branch of rural economy is particularly valuable at this time, when the culture of the apple is prominently before the farmers of Maine.

The plan adopted, though perhaps not so well matured as it might have been had the matter been longer considered, (and it undoubtedly would have received more attention had we thought of bringing the matter before the Society), was the sending of the following card to a number of persons in the State who were regarded as well qualified by experience to give an opinion that would be a guide to the novice in the business.

"DEAR SIR:—As an interesting experiment, but more especially to elicit information upon a point of much practical importance to the farmer and amateur horticulturist, I desire your coöperation in determining, as near as may be the best ten varieties of apples for general cultivation for market purposes; also, as to the two or more varieties of pears best adapted for cultivation in the northern and central parts of the State. Nomenclature, that adopted by the Pomological Society, as near as may be.

For this purpose I send you this card, which if you will fill out as indicated by the numbers and return to me at your earliest convenience, I shall be greatly obliged.

Respectfully yours,

L. F. ABBOTT."

These cards were each numbered from one to ten for apples and two varieties of pears indicated, with space for brief remarks. Fifty of these cards were inclosed and addressed to as many prominent orchardists in the State. Only about seven-tenths of the cards were returned; probably some failed from being addressed wrongly, and others evidently were mislaid and forgotten. The result of the voting "as far as heard from" was a trifle more satisfactory and a good deal less complicated than our late Presidential election, but some of the "returns" were about as tardy, but they gave no uncertain sound when they did come.

The following tabular statement gives the result. The figures at the head of the columns indicate the order of excellence, and those beneath, opposite the varieties named, show the number of times that variety was named by different individuals. For instance, the Baldwin was named as No. 1, twelve times; as second on the list three times, and only once as the lowest in the order, as indicated under 10. The right hand column gives the whole number each variety received. The result, as indicated by this experiment, would give as the best varieties Baldwin, 25; Rhode Island Greening, 25; Northern Spy, 15; Talman's Sweet, 15; Roxbury Russet, 13; Porter, 12; Hubbardston Nonsuch, 12; Red Astrachan, 12; Gravenstein, 10; Nodhead and King Sweeting, each 8. Of pears the Flemish Beauty stands 12; Louise Bonne de Jersey and Bartlett, 6 each, while the Beurre d' Anjou has 5.

APPLES.

NUMBER OF TIMES NAMED AS—

	1st.	2d	3d.	4th.	5th.	6th	7th	8th.	9th	10th	Whole No.
Baldwin.....	12	3	1	3	—	1	3	1	—	1	25
Rhode Island Greening.....	2	9	4	2	2	3	—	2	1	—	25
Northern Spy.....	2	—	2	1	3	1	—	2	3	1	15
Talman's Sweet.....	—	2	1	2	—	—	5	1	2	2	15
Roxbury Russet.....	—	2	3	1	1	1	1	2	—	2	13
Porter.....	—	1	2	2	1	—	3	1	1	1	12
Hubbardston Nonsuch.....	—	1	2	—	3	3	1	2	—	—	12
Red Astrachan.....	3	1	1	1	—	1	—	3	—	2	12
Gravenstein.....	—	1	1	1	1	2	—	2	—	2	10
Nodhead.....	—	—	1	3	—	2	—	—	1	1	8
King Sweeting.....	1	1	1	1	1	1	—	—	1	1	8
Williams' Favorite.....	1	1	—	—	1	1	—	—	2	1	7
Yellow Bellflower.....	—	1	—	—	2	3	—	1	—	—	7
Harvey.....	2	—	1	2	—	—	—	—	1	—	6
King of Tompkins County....	—	—	—	2	2	—	1	—	1	—	6
Dean.....	1	—	—	1	1	—	—	—	1	1	5
Sweet Bough.....	—	—	—	—	1	1	—	2	1	—	5
Blue Pearmain.....	—	—	—	1	2	—	2	—	—	—	5
Duchess of Oldenburgh.....	1	—	—	1	—	—	—	—	1	—	3
Early Harvest.....	1	1	—	—	—	—	—	—	1	—	3
Pumpkin Sweet.....	—	—	—	—	—	1	—	—	1	1	3
Fameuse.....	—	—	—	—	1	—	—	1	1	—	3
Garden Royal.....	—	—	1	—	—	—	1	—	—	—	2
High Top Sweet.....	—	—	—	—	—	1	—	—	1	—	2
Ribston Pippin.....	—	—	—	—	—	1	—	—	1	—	2
Black Oxford.....	—	—	—	—	2	—	—	—	—	—	2
Starkey.....	—	—	1	—	1	—	—	—	—	—	2
Mother.....	—	—	—	1	—	—	—	1	—	—	2
Wagener.....	1	—	—	—	—	—	—	1	—	—	2
Cat Head.....	—	—	—	—	—	1	—	—	—	—	1
Danvers Winter Sweet.....	—	—	—	—	—	1	—	—	—	—	1
Hurlbut.....	—	—	—	—	—	1	—	—	—	—	1
Bartlett Seedling.....	—	—	—	—	—	—	1	—	—	—	1
Minister.....	—	—	—	—	—	—	1	—	—	—	1
Foundling.....	—	—	—	—	—	—	1	—	—	—	1
Winthrop Greening.....	—	—	—	—	—	—	1	—	—	—	1
Cole's Quince.....	—	—	—	—	—	—	1	—	—	—	1
Primate.....	—	—	—	—	—	—	1	—	—	—	1
Bumpkin.....	—	—	—	—	—	—	1	—	—	—	1
Vandevere.....	—	—	—	—	—	—	—	1	—	—	1
Sherwood's Favorite.....	—	—	—	—	—	—	—	1	—	—	1
Somerset.....	—	—	—	—	—	—	—	1	—	—	1
Milding.....	—	—	—	—	—	—	—	—	1	—	1
Noyes Apple.....	—	—	—	—	—	—	—	—	1	—	1
Bailey Sweet.....	—	—	—	—	—	—	—	—	1	—	1
Winter White.....	—	—	—	—	—	—	—	—	1	—	1
Sops of Wine.....	—	—	—	—	—	—	—	—	1	—	1
French.....	—	—	—	—	—	—	—	—	1	—	1
English Russet.....	—	—	—	—	—	—	—	—	1	—	1
Red Russet.....	—	—	—	1	—	—	—	—	—	—	1
Seek-no-further.....	—	—	1	—	—	—	—	—	—	—	1
Gloria Mundi.....	—	—	1	—	—	—	—	—	—	—	1
Sweet Baldwin.....	—	—	1	—	—	—	—	—	—	—	1
Early Pennock.....	—	1	—	—	—	—	—	—	—	—	1

PEARS.

1st. 2d.

Whole No.

PEARS.

1st. 2d.

Whole No.

Flemish Beauty.....	9	3	12	Glout Moreceau.....	1	—	1
Louise Bonne de Jersey..	2	4	6	Goodale.....	—	1	1
Bartlett.....	5	1	6	Fulton.....	—	1	1
Beurre d'Anjou.....	—	5	5	Lawrence.....	—	1	1
Clapp's Favorite.....	3	—	3	Seckel.....	—	1	1
Nickerson.....	—	1	1				

APPENDED REMARKS.

In regard to the Baldwin, Mr. Alfred Smith of Monmouth, writes: "I have left the Baldwins out in the cold. It is too tender for Maine; will not bear high, persistent culture, save on our highest ridges. We deem it a failure in northern Maine, also near lakes and streams or on flatish land." The Roxbury Russet, Mr. Smith says, "is an annual bearer, will bear high culture in southern and central Maine, but is liable to fail in the northern parts of the State. It is a late keeper in summer, and has no competitor in the market at that season, hence will always command the highest price. The Northern Spy, Rhode Island Greening, Yellow Bellflower, and Talman's Sweet, are hardy yearly bearers."

Hon. Washington Gilbert of Bath, says: "The Rhode Island Greening and Talman's Sweet in my opinion are the standards, although it is very desirable to find a larger sweet apple of equal quality. The Roxbury Russet under *no* culture is a poor thing, but does well in certain districts under good culture, and is to be regarded in any case only as tolerated for want of something better in its season. If the Northern Spy proves satisfactory on full trial, the Russet ought to be wholly discarded with us. The Hubbardston Nonsuch I commend for extensive culture, and see no reason why it is not an excellent apple in this State for shipment to foreign markets. In some parts of Lincoln county, the Hurlbut proves an acquisition; strong and hardy in wood, an early and enormous bearer every year; fruit fair second rate. As this apple bears migration to Maine without difficulty, I see no reason why it may not do well throughout the apple growing regions of the State. My view is that the requisites for a good market variety are, vigor and hardiness of wood, early, constant and abundant bearing under good culture and *selling* qualities of fruit. It is not so much a matter of importance to the farmer whether the quality is absolutely good, as whether the apple sells well. He cannot afford to educate the taste of the people. He must adapt his wares to the demands of the market. Very few buyers know what is a first-rate apple; and if the farmer offers them an apple of the finest quality, very likely they would pay somebody else a higher price for a poorer apple, costing the producer but half as much as the apple of finer quality. If, therefore, the Hurlbut is not equal in quality to the Rhode Island Greening,

or even the Baldwin, yet if it produces twice the quantity of the Greening, as I think it does, and sells for even a quarter less by the barrel, there is still a great advantage in its culture. But there would not be that difference in price. To sum up, my advice would be 1, 2, 3 of my list. (R. I. Greening, Talman's Sweet and Hubbardston Nonesuch.) To plant Baldwins where the planter feels that he can take the risk of early death or decay, or failure in quality, and Roxbury Russets only where high culture is intended, and where its local success has been demonstrated in similar situations in the planter's neighborhood, and to experiment vigorously, but persistently with 6, 7 and 8,—(Hurlbut, King of Tompkins County and Northern Spy.”)

CULTURE OF THE GOOSEBERRY FOR MARKET.

BY L. F. ABBOTT, (*Frye, Jr.*) WILTON.

Of most people it may be said that they have their hobbies. While in many instances the idiosyncrasy in the make up of the individual may be wholly unknown to himself, the peculiarity is perfectly apparent to his friends. This may be my case. That I have my hobby is probable; possibly it may be in the direction indicated at the head of this essay. But were I to be allowed to express an opinion it would be in the negative. It might be bees, bugs or botany, but not the gooseberry. But I believe in the gooseberry, however, as a market fruit to be raised in Maine. And notwithstanding our good brother McLaughlin of Bangor, believes that fifty bushels a year of this fruit would supply the Maine market, I still vote for the gooseberry as profitable to raise to a reasonable limit. The markets of Lewiston and Auburn are not half supplied in the season of this fruit. And what is true of those two places is true of all the larger places in the State. But we need not be confined to a home market. This fruit always has found a ready sale in Boston for the limited supply which has been sent there. I think we need not be troubled for a market for all we can raise. But are they profitable? That's the question that is to be answered; and to discuss this part of the subject and point out a method of culture that has proved successful, is the purpose of this essay.

As compared with Strawberries. I believe that taking a half acre of land and planting equal portions with gooseberries and strawberries, and keeping it thus occupied for a term of ten years,

giving each the cultivation that the plants require to realize good crops, that at the end of the ten years the balance sheet would show largely in favor of the former. In the first place much higher cultivation and consequent increased cost of production, would be required for strawberries; the market is more fluctuating, consequent upon greater competition, besides greater liability to damage from bad weather, transportation, and, at times, an overstocked market of so perishable a fruit. Besides this, the work of replanting every two or three years is an expense not incurred in the culture of the gooseberry.

The Gooseberry Worm. There is one serious drawback in the culture of the gooseberry that looks formidable to those that have taken no pains to rid their bushes of the scourge. I refer to the gooseberry worm. This is a hard customer, truly. But by having a knowledge of its habits, and attending to the plants at the right time, this obstacle is not so formidable as it at first seems.

Soil and Situation. In starting a gooseberry plantation it is quite essential that at the beginning the work be rightly done. A good, retentive, strong soil is essential, and if free from stones all the better; and I should endeavor to give the land such a depth of working before setting the plants that all after culture would be very near the surface, and that mainly to keep the ground clear from weeds. A situation where the snow is liable to blow off entirely in the winter, is worse than where it might drift somewhat. A southerly or easterly exposure should be avoided when practicable. A dry soil, a sunny exposure and a dry atmosphere, are unfavorable to the culture of this fruit.

What plants to set. In purchasing plants, or from whatever source they are obtained, it is best to procure those that were started from cuttings or young plants from layers, having good roots. Plants are quickly multiplied by layering, and with a little pains one can easily produce his own plants by procuring a few from the nursery and then bending down the ends and covering them with earth. They quickly take root, and by care one can soon raise a hundred plants with fine roots; but if half a thousand are wanted to set at once, the better—because quicker—way would be to either plant cuttings or order from some reliable nurseryman, who would furnish them, not to exceed six cents apiece, and possibly considerably less by the quantity.

Varieties. Of those I have grown I should give the preference to Houghton's Seedling, but from what I hear of Smith's Im-

proved, should give that variety a trial. If my memory serves me, Mr. Varney, at the last Winter Meeting of the Pomological Society, spoke highly in favor of that variety, as did also Mr. Fernald, although we do not find their remarks in the last report.

Setting the Plants. In setting the plants, we should take into consideration the fact that we shall need to apply dressing and mulching material in the course of time, and consequently set the plants with this object in view. My experience the last fall has convinced me that I committed an error in planting four feet apart instead of five. The trouble is not so much in the plants being crowded as from the inconvenience in passing among the vines with horse and wagon for various purposes. If the plants are set in squares of five feet, by driving the horse quite near the row an ordinary farm wagon will run clear of the rows by about a foot. Nearer than that the liability is to injure the plants by passing over them.

To facilitate the work of setting, we stretch a line about a foot from the ground for the rows; with a five foot measure and hoe, pass along and dig the holes. The plants will be tied up in bundles of fifty each; place them in a pail half filled with water, cut the band, and pass along throwing down a plant at each hole. With a garden trowel return over the row and set the plants, taking care to have the upper roots at least three inches beneath the surface. If your ground is liable to be bare of snow during the winter the action of the frost and frequent hoeings will bring the roots too near the surface if not pretty deeply set at first. Press the earth down firmly about the roots, and from their being wet, it will readily adhere to them.

Cultivation. Hoe as you do corn, at least three times during the summer—keeping the ground perfectly clear of weeds, and as often as the worms appear wet the bushes over with water in which poke root has been steeped. This is more effectual and much cheaper than to buy the powdered helebore.

Remedy for the Gooseberry Worm. Take a half-hogshead, which your groceryman will be glad to get rid of at fifty cents for a whole one—one with iron hoops is best. Place this near your bushes; then dig a bushel or two of poke root, (helebore). If you have none of your own, your neighbors will not charge you high for the privilege of digging. Wash clean and put in your tub and add a dozen pails of water. This should be done quite early, as soon as the leaves on the plants begin to put out, so as to be

ready for the worms the last of May. The flies that produce the worms make their appearance, usually, the last week in May. Their presence is readily shown by turning up the leaves, when numerous clusters of eggs will be seen upon the under sides, adhering in rows upon the ribs of the leaves. The worms hatch from these in about four days and commence eating slight holes through the leaf. As they become older the tissue of the leaf is wholly devoured before they leave it. At this stage of their growth their presence is easily detected, and a weak solution of the poke will destroy them. Much vigilance is required to keep the plants clear of these insects, as successive broods appear every month, or oftener, through the season. A garden syringe with a fine nose, costing one dollar, is wanted to apply the solution.

After Cultivation. The third year the plant will bear quite a crop of fruit, and continue increasing in productiveness indefinitely, according as the plantation is enriched and otherwise cared for. A half bushel may be picked from a single plant. To avoid any ill effects upon the fruit that might be feared from the use of the worm remedy, it is well to withhold the solution for ten days before picking, unless rain should occur before. When the plants have borne one or two crops, top-dress the ground thoroughly in the fall. As the bushes will be getting large, occasioning more inconvenience in passing among them, let the work be thorough. Use a compost of manure, leaf mold, ashes, turf, &c. Mulch at the same time with chip manure, sawdust, or anything that will keep the manure from drying up, as well as the ground cool and moist. It will also serve to keep down the weeds.

Picking the Fruit. Picking should be done while the fruit is yet green, after it has attained to full size and before it begins to turn. While in a green state the berries are hard and remain so for a long time after the fruit is gathered. But after it begins to change color it soon grows soft, and on that account is objectionable for market. So, too, premature turning of the fruit is the result of picking in hot weather and allowing the berries to lie in a mass or barreling them up without allowing them to become cooled. Hence, they should be spread out thinly as picked, or put in the cellar.

Preparing for Market. Remove the leaves and dirt by running through a fanning mill, adjusting the sieves so as to separate the smaller berries, also the coarser particles of dirt. Pick out all partially decayed and wormy fruit by hand. When ready for

market, line nice, clean flour barrels with paper, fill the barrels so there will be no empty space, head up and forward to the grocery-man with whom you have had a previous understanding to receive them. Ten to twelve cents a quart, after paying commission, may safely be reckoned on. Ten dollars a barrel, net, is less than the average price for several years past. That this fruit may bring that for some time to come I see no good reason to doubt. But could two dollars a bushel be realized, the result would be more satisfactory than investing money in wild-cat stocks, not to say anything about some so called "savings" institutions.

REPORT FROM CUMBERLAND COUNTY.

HARRISON, January 20, 1877.

Z. A. GILBERT, ESQ.:

Dear Sir:—Your communication of January 1st was duly received. I am sorry I am no better prepared to furnish you full and accurate information on all the points named in your letter, as my opportunities for observation during the past season have been quite limited, especially in this county.

The apple crop in this immediate vicinity was very small in 1876. This great decrease of product from former years was caused by the depredations of the caterpillars, which for the second time ravaged indiscriminately, defoliating the trees and destroying every germ of fruit; and it is feared by some that the trees have sustained permanent injury, and will, in future, be less healthy and productive than formerly.

It is a noticeable fact that the caterpillars confine their operations mainly to the elevated localities; our hills and high ridges being badly infested by them, while orchards located in valleys and low-lying places near ponds and streams, have usually escaped serious damage. I know of some farmers, who, by persistent watching and fighting the enemy have preserved their trees from injury and secured a fair crop of fruit. There is no other cause of want of productiveness in our apple orchards for the past year, except the general lack of care and cultivation in order to promote a regular and constant growth. The instances of handsome, thrifty orchards, which in their appearance tell a good story of the energy and skill of the owner, are exceptional, though it seems that there is a waking up on this subject, and there is evident a spirit of interested inquiry into the best methods of treatment for

orchards. I learn that in some parts of this county, particularly the lower part, good crops of apples were realized the past season. The towns of Windham, Gorham, Gray, New Gloucester, and most of the towns in this county, have a soil naturally well adapted to fruit growing, and we have many earnest, progressive farmers who are endeavoring, by intelligent and sacrificing labor and investment, to solve the question of the profitableness and economy of fruit-raising.

Our supply of trees for planting comes mainly from the Western nurseries, though some of our Maine nurseries are being drawn upon for a part of the trees required for new orchards; and I believe our home-grown stock is generally found good.

I am not aware of very serious damage to apple or pear trees on account of blight. I have noticed indications of leaf blight on my pear trees, but I think it was not so bad last year as in previous years. I am testing the effects of a thorough top-dressing with coal ashes on pear, plum and cherry trees, for the purpose of promoting a healthy condition, and for protection against insect enemies, particularly the curculio.

The Baldwin apple is the principal kind raised for the general market, and is, in this section, very productive, and in elevated localities quite hardy. But in low places, where an extreme degree of cold prevails in the winter months, I think it is less hardy and apt to die out in a few years.

The Northern Spy, Hubbardston Nonsuch, Rhode Island Greening and Roxbury Russet, are being propagated more than formerly.

The improved varieties of crab apples are being planted here quite extensively, on account of their fine quality for cooking and preserving, and superior hardiness. The Transcendent Crab is very popular,—more so than any other.

The principal market for any apples raised hereabouts in 1876 was Bridgton, where they have been worth from \$1.50 to \$2.50, according to quality.

I have noticed in the towns of Waterford, Sweden and Lovell, in Oxford county, during the past autumn, some well kept orchards, and in some parts of those towns good crops of fruit were raised.

I congratulate the lovers of fruit culture on the success of the State Pomological Society in awakening a fresh interest in this favorite pursuit, and remain, with sincere regard,

Your ob't serv't,

GRANVILLE FERNALD.

REPORTS FROM LINCOLN COUNTY.

WALDOBORO', January 15, 1877.

There has been no general change in the interest manifested in fruit culture in this county for the past season. Old orchards are yearly dying out and giving place to young and thrifty trees. The crop of fruit in this county, the past season, was not an average production for the bearing years, it being about one-third less than the crop of 1874. The past winter (1875-6) was more severe and damaging to fruit trees in this vicinity than any preceding winter for the past twenty years. The sudden changes of weather, alternating between hot and cold, nearly ruined all the plum trees in this section; plum orchards producing several bushels in 1874, did not produce the same number of quarts the past season. A large number of pear and apple trees of all sizes and ages were also winter-killed. Mr. John Currier, proprietor of the Waldo-boro' Nursery, informs me that he lost hundreds of trees in his nurseries last winter. I noticed that many of the fruit trees in this vicinity looked unthrifty and sickly through the past season, and saw but few orchards that appeared healthy and vigorous; the fruit raised was smaller in size than that of previous years, caused by the unthriftiness of the trees and by the long continued drouth. Several varieties of pears were a failure in this town; the Flemish Beauty badly cracked, while the Beurre de Amalis was woody and worthless. Grapes matured much better than on previous years, and a number of native varieties ripened well in open air. Our grape vines were badly injured in early summer, when they were putting forth their leaves, by a small worm, about the size of a cambric needle, of the color of the vine, and from one-fourth to one-half inch in length. These insects devoured the leaves with alarming rapidity. We could not devise any means of destroying them, neither could we obtain any information about them. The apple-tree or tent-caterpillar and the forest-tree caterpillar appeared in immense quantities, and several orchards were nearly stripped of their foliage. The depredations of the forest-tree caterpillar continued about two weeks, in the month of June. They fed at night or in early morning, and in the middle of the day were collected together in large bunches upon the trunks of the trees, when a pail of strong soap suds would put them *hors du combat*. The apple-tree or tent-caterpillar continued to ravage the trees until harvest time.

For the encouragement of nursery and orchard culture, the Lincoln Agricultural Society have the past two years offered liberal premiums. A large number of young trees are set out yearly in this county, and until last spring a large portion of these trees were from New York, but the trees set in 1876 were mostly grown in Maine. Experience is teaching fruit growers that acclimated fruit trees are the best for Maine. We have no doubt in regard to this, as we have repeatedly tried the New York trees upon the same soil, and with equal culture with our Maine trees, and our trees are hardier, more thrifty and better bearers, and in every way superior to imported trees.

The fruit raised in this county is mostly marketed in Lincoln and Knox counties, and it does not supply the demand, as large quantities of fruit are brought here from Massachusetts and the West yearly. Apples were very cheap through the past summer and autumn, being worth from fifty cents to one dollar per bushel. The leading varieties of apples grown for market in this vicinity are as follows: Summer varieties,—Red Astrachan, Williams' Favorite, Sops of Wine, Early Harvest, Sweet Bough. Autumn varieties,—Gravenstein, High Top Sweet, Jewett's Red, Porter, Lady Haley, Fall Pippin, Winthrop Greening, Foundling. Winter varieties,—Baldwin, Hurlbut, Late Baldwin, English Russet, Rhode Island Greening, Minister, Northern Spy, French Russet, Sweet Porter, Sweet Russet, Golden Russet, Yellow Bellflower, Hubbardston Nonsuch, Canada Red.

Respectfully yours,

H. J. A. SIMMONS.

NOBLEBORO', January 25, 1877.

MR. SAWYER:

Dear Sir:—I received your letter in due time, but owing to sickness and urgent business have neglected to answer it until now.

I am a beginner in the fruit-growing business, having set my first lot of eighty trees six years ago last spring. Some of these I raised from the seeds; the remainder I bought of Mr. John Currier of Waldoboro'. With the exception of a very few which winter-killed the third winter after setting, (these being R. I. Greening and Gravenstein), they have all done well. Some of them are now more than five inches in diameter, and from which I

gathered more than two bushels of apples each. Last fall they had more or less fruit, it being the second year of their general fruiting. I have set trees at different times since, so that now I have an orchard of four hundred apple trees, all of my own raising, and grafted when one year old, excepting a part of the first lot as stated above. The most of my trees are set in grass ground. I dig around them both fall and spring, and once a year I work in manure and wash them with Babbitt's potash to kill lice and keep the trunks free from moss. I search for borers three or four times in the course of the season, and have commenced to try the use of sheathing paper, allowing the lower end to run down into the soil and the other end to extend up on the trunk about one foot and tied with rope-yarn. I tried this method last year and think very favorably of it.

I am not propagating trees very extensively, but have a nursery of about 6000 apple trees. I have had experience with over eighty different kinds, many of which I have discarded as I find them to be unreliable as orchard trees. I have travelled over a large portion of the State and taken much pains to ascertain the varieties best adapted to this section. From experience and observation I am satisfied that success in raising an orchard depends much upon the varieties selected. I have endeavored in my own practice to plant such kinds as make the best growth and the most hardy trees, regardless of the quality of the fruit. My object is to raise an orchard of hardy, thrifty trees in as short a time as possible.

I have learned by experience that there are many very choice varieties which it is almost impossible to raise from nursery trees, or at least would take double the time that it would to raise some others. These can be grafted into those which will grow more rapidly, after the latter have become large enough to bear a bushel or two of fruit. In this way one can get more fruit in less time than by undertaking to raise such varieties from nursery trees.

The question may be asked, "why not take seedling trees without being grafted and grow them to the proper size, then graft into the branches, instead of grafting them in the nursery and again in the orchard?" My answer is, that a large portion of the seedlings prove to be slow growers and not hardy, and one can raise an orchard from kinds that are known to be hardy and rapid growers in half the time and run no risk in regard to these points. There are many very valuable varieties of apples that

are hardy and rapid growers and well adapted to Maine; such as Hurlbut, N. Y. Pippin, Fameuse, Ben Davis, Talman's Sweet, Garden Sweet, Red Astrachan, &c., while there are many others, too numerous to mention, that are not adapted to our cold climate.

I have an orchard of 160 pear trees, some of which were planted eight years ago, but the most of them within two years. I have raised nearly all of them from the seeds. So far I am very much pleased with the prospect of raising pears. My trees are standards. Six years ago I set thirty dwarfs, which have proved a failure—nearly all having died, while my standards set at the same time and with the same care have fruited the last two years. I have about 1500 nursery pear trees.

My grapes did very well the past season.

In great haste, yours,

ASA F. SEVERANCE.

REPORT FROM PISCATAQUIS COUNTY.

EAST SANGERVILLE, January 16, 1877.

Z. A. GILBERT, *President of Maine State Pomological Society:*

Dear Sir:—Yours of January 1st, desiring information in regard to the conditions and progress of fruit culture in this section, (central Piscataquis), is received.

The apple crop is above an average. I estimate it 25 per cent. above.

Of pears very few are raised, more attention is being given to their production than formerly.

Of plums and cherries the field is surrendered pretty much to their enemies, the curculio and black knot.

Currants and gooseberries are nearly all ruined by the currant worm.

Of grapes nearly every family has a vine or two. The Delaware and Early Hudson are the earliest, consequently the most approved varieties.

Our orchards have not been devastated by any unusual insect depredation. The ravages of caterpillars have been less than usual.

Of young trees a small percentage were injured or killed during the winter or spring by the cleaving of the bark from the trunk near the ground. Cause, supposed to be too early starting of the sap, followed by freezing. (Please give the matter attention.)

For the increase of orcharding we have depended too largely upon Western grown trees hawked about the county by the irrepressible tree agent. The result in planting out these trees has been a general failure.

Beginners in orcharding are desirous of obtaining too many varieties. A wise course is to select a few of the most approved sorts adapted to the climate and market. The following well proved varieties are perhaps as good a selection as can be made; the trees generally proving hardy and productive, viz :

High Top Sweet, Sops of Wine, Red Astrachan, Duchess of Oldenburg, Porter, Orange Sweet, Fameuse, Nodhead, Jersey Greening, Dean, Talman's Sweet, Yellow Bellflower, Black Oxford and Rolfe; the last being a seedling originated in the county. It is being introduced into Penobscot county under the name of the *Coreless*. It is believed to be a valuable variety. [See page 9.]

In brief, my conviction is that the increase and improvement of orcharding in this section demands,—

1st. That we raise our own trees. It is generally conceded by our best informed fruit-growers that seedlings properly grown, then transplanted to the orchard, and after becoming well established and thrifty, engrafted in the branches, make the best trees.

2d. More attention must be given in selecting hardy varieties only. Those succeeding perfectly in more southerly sections of the State are quite liable to fail in Piscataquis.

3d. Better cultivation must be given. More care must be exercised in preventing breaking by cattle and drifting snows. Trees must be watched and kept free from insect depredations.

Finally, we need more light and knowledge to guide and help us overcome the obstacles in the path that leads to success in fruit culture. To the Society of which you have the honor to be the worthy President, we look for this assistance.

Yours truly,

H. L. LELAND.

REPORT FROM WALDO COUNTY.

By J. W. LANG, BROOKS.

The following imperfect notes are submitted in lieu of something better, which, had I known I was to be called upon, would have been prepared.

The season with us in Waldo county has been one of small returns from the orchard. Several causes have brought this about.

The comparatively good crop of the previous season rendered this an "off-year," and the short, sharp drouth experienced in June tended to blight the setting fruit. The crop harvested was, however, fully sufficient for home use.

Insect depredations were rather in excess of the average. The caterpillars made an onset in the opening days of spring and summer and required "eternal vigilance" to prevent their injuring orchards to a serious extent. Those who gave strict attention to their trees were rewarded by a partial crop of fruit, and in having their trees kept in a state of vigor and health which neglected ones did not retain. The codling moth and the borer are great pests in some localities, and this year have done more than average damage. Enough attention is not given to taking care of the wormy fruit and the larvæ is left to develop in almost undisturbed freedom. There is increased attention given to exterminating the borer as better knowledge of its habits is diffused.

Young trees continue to be planted out, but not so largely as formerly. They are mostly from New York nurseries. Those sold for the two past years have been largely Russian and crab varieties. If this continues, nearly every farmer will have a crab orchard soon. We cannot but disapprove of this almost wholesale planting out of crabs. They may make good trees to re-graft, but we have enough hardy stocks of larger growth and habit that are preferable.

We have a few small nurseries in this county, but the persistent New York tree agents contrive to make the largest sales. The Robertson Bros. of Monroe, have a very good nursery. There are others in the town, also at Belfast, Winterport, and other points.

I have a very good opinion of the Hurlbut apple. I procured some grafts of H. J. A. Simmons of Waldoboro'. They have been set two years. They have made a splendid growth and look thrifty and hardy, but have not yet fruited. As far as growth is concerned, I can endorse Mr. Simmons' high opinion.

The Naked Limbed Greening maintains its high character and is gaining new friends. This apple is extensively grown in Monroe and Prospect. The Rhode Island Greening does not do very well with us and appears not to be entirely hardy. The Yellow Bellflower does well—even best—upon heavy soils,—on land where the Baldwin would throw up at once.

We recommend the putting out of more Duchess of Oldenburg, and Red Astrachan, for fall use and marketing. They are ready

to use early and bring good prices. The Kilham Hill is found here in almost every orchard. It is considered a very good fruit, and profitable.

Small fruit culture is on the increase, especially strawberries and cranberries. Pears do not do well here except in a few localities. Grapes are claiming more attention than formerly.

REPORT FROM WASHINGTON COUNTY.

Mr. Z. A. GILBERT:

Dear Sir:—Your card of the first instant is at hand.

As you are aware, but few apples are grown in this county as yet, and owing to the "hard times" but few trees have been set within the past two years. Most of those few were bought of agents from New Brunswick,—not because they were preferred to home-grown trees, but because that was the easiest way to get rid of the agent.

The year 1876 would have been our apple year but for the dry weather which caused many of the young apples to fall. If the drouth shall be found to have reversed the bearing year it will have been a blessing in disguise.

The price of fruit here is, of course, ruled by the Western markets, but our apples always bring a little more than Western ones.

The tent caterpillar was more plenty here last season than in former years, but where promptly exterminated did little or no damage.

Yours truly,

H. A. SPRAGUE.

CHARLOTTE, Washington Co., January 15, 1877.

In Memoriam.

ALBERT NOYES.

DR. JAMES C. WESTON.

“Par nobile fratrum.”

ALBERT NOYES of Bangor, died suddenly of disease of the heart, March 16, 1877.

He was mentioned in the act of incorporation of the Maine State Pomological Society in 1873, was a member of the Executive Committee during that year, and afterwards till the time of his death Trustee for Penobscot county. He ever manifested a deep interest in this and kindred associations, hence it is appropriate here to pass briefly in review the leading incidents of his active life.

He was born in Newburyport, Mass., Aug. 9, 1816, and was the son of John and Nancy (Garron) Noyes. When he was two years old the family removed to Salem, Mass., where he obtained his education. In 1836 they removed to Bangor, and Albert Noyes, in company with his elder brother Henry, commenced the iron and tin ware business, in which he continued until the day of his death. He was a successful and honorable manufacturer and merchant and gained the confidence and esteem of the whole community.

In 1840 he was married to Caroline Dole of Bangor, who with four sons and three daughters, survive him. In his private life, he was genial and kind, an affectionate relative and warm friend. In his public life, he was charitable, benevolent, cheerfully accepting offices in his city, in his parish and in his favorite associations which would tax his time and energies, and heartily coöperating in every project which would tend to benefit the community.

He always had a taste for the cultivation of flowers and fruits. He early erected a rural cottage in the suburbs of the city, built a conservatory and established a nursery in his spacious grounds. Every new and rare plant, bulb, shrub, vine and tree he promptly procured and introduced to the knowledge of his fellow-citizens, and so contributed his full share to encourage a love for rural pursuits.

He was very fond of his home. To him it was the most attractive spot upon earth; and one of his most cherished recreations was to devote his leisure moments to labor in the garden, and to reading works pertaining to horticulture and agriculture.

In 1850 he was one of the pioneers in the formation of the Bangor Horticultural Society, in whose welfare he was ever interested, always contributing to make its annual exhibitions attractive and successful; and he represented this Society in the Board of Agriculture three years, from 1858 to 1861. He enlarged his premises, buying more land, and successfully engaged in agriculture, owned valuable stock and the choicest poultry; and became an active member of the State Agricultural Society and Penobscot Agricultural Society.

He was President of the Penobscot Poultry Association incorporated in 1870, and of the Maine Poultry Association incorporated in 1871. He was also a Director of the New England Poultry Society, a branch of the National Society. He served each with rare zeal and ability, and was always present at their exhibitions carrying his most valuable specimens.

Only the day before his death, he spoke with great satisfaction of the Maine Poultry Association, of what it had accomplished, of the cheering prospects of the next annual exhibition, and of the remarkable generosity of the citizens of Portland in providing liberal premiums.

This bare recapitulation of the various associations to which he belonged, sufficiently indicates what valuable services he rendered his fellow men, often without emolument or hope of reward. He was so generous and useful that he won their love and gratitude, and all feel a sense of loss in his sudden decease.

J. C. W.

DR. JAMES C. WESTON died at his home in Bangor, after a brief illness, on the 17th of May, 1877, in the 60th year of his age. He was one of the charter members of this Society, and among the first to contribute to its permanent establishment by enrolling himself as a life member. At the first election of officers he was chosen as the Corresponding Secretary, which position he filled most acceptably to the time of his death.

Dr. Weston was born in Bath, in this State, September 18th, 1817. He graduated at Dartmouth College in 1842, and from the Medical Department of the same institution in 1845. During the latter part of that year and the year 1846, he was Assistant Surgeon at the Baltimore City Hospital, and subsequently he was City Physician at Portland until 1849. From the latter date until 1853 he was Surgeon at the U. S. Marine Hospital in Portland, and during 1853 he removed to Bangor, where he ever afterwards resided.

For a number of years Dr. Weston has been retired from the more active practice of his profession, but his services were in frequent requisition as a consulting physician, and his abilities were very highly esteemed by the medical fraternity. He was a prominent member of the Maine Medical Association, and had this year been elected its Historian to prepare a history of the Society for the last quarter of a century. He had also been an Examining Surgeon for the Pension Bureau since 1863.

Dr. Weston was a man of scholarly tastes and of varied and extensive learning, and took an active part in all movements for the promotion of mental, moral and social culture. In 1870 and 1871 he travelled extensively in Europe, visiting all the celebrated art galleries and making careful notes of his observations, which formed the basis of a course of lectures which he recently delivered before the Bangor Art Association, of which he was Vice President. He was no less fond of music than of art, and was one of the founders, and at the time of his death, President of the Bangor Handel Association. His style in writing and speaking was easy, fluent and graceful,—though varied as the themes to which he devoted his attention. In the ornate word-painting of the art critic, the concise terms of scientific demonstration, the faithful narrative of the historian, and the straightforward language of common sense as applied to practical farming and the affairs of every day life, he was equally at home, and his words were always well chosen and his ideas clearly expressed. He was

refined, affable and beloved in all the social relations ; quiet and modest in his intercourse ; industrious, persevering and thorough in every undertaking ; decided in his convictions, and faithful to his trusts in all the public duties of citizenship. He was twice married, and leaves a wife and two young children, daughters, by his second marriage.

The life of Dr. Weston was in the highest and best sense a success. His work was *well done*. By the traits of character and the works of beneficence above imperfectly delineated, he endeared himself to every community where he was known, and made a friend of every person with whom he was associated. But, marked as was his success in these things, happy as were his surroundings and brilliant as were his accomplishments, his most enduring fame, and his highest claim to the gratitude of the public and of posterity, rests upon his efforts in behalf of the agricultural, horticultural and industrial interests and institutions of the State. During his residence in Portland he was an active member of the Portland Horticultural Society, and at a supper given by that Society to the State Pomological Society, on the occasion of our exhibition in that city in 1874, he remarked that whatever success he had attained as a fruit culturist, was due to the interest awakened by the Portland Society during his residence there.

Upon his removal to Bangor he became connected with the Bangor Horticultural Society, of which he continued to be an efficient and useful member to the time of his death. He was also a member of the State and County Agricultural Societies.

During the years 1862, '63 and '64, he was a member of the State Board of Agriculture, and took an active part in its proceedings. The nature of the subjects presented for the consideration of the Board during those years—resulting partly from the condition of public affairs and partly from extrinsic causes,—as well as the current of thought upon agricultural and industrial topics within the State, gave great importance to its proceedings ; and as a member, and during most of the time chairman of the business committee, Dr. Weston had great influence in directing their course.

Prominent among the subjects claiming the attention of the Board, as well as of the Legislature and the public, at that period, were the establishment of the State Agricultural College, involving the more general question of agricultural and industrial education among the people ; the relations of capital and labor, and of man-

ufactures to agriculture; and the unusual demands upon the farmers of Maine growing out of the then present condition and prospects of the country. On each of these, as well as upon some of the more usual subjects of agricultural discussion, Dr. Weston presented able and exhaustive reports, and it is worthy of note that in a Board composed of men of marked ability and great practical wisdom and holding its meetings (at that time) concurrently with the sessions of the Legislature, the specific recommendations in his reports were in every instance unanimously adopted. A more particular reference to some of these papers would best illustrate the breadth of his views, his accurate knowledge of the resources of the State, his clear comprehension of its wants and his faith in its future development; but the unavoidable length of this notice will admit of but a single extract for that purpose:

* * * "The errors of the past are irremediable. The present and future can only be moulded by our influence. * * * *

As we look through the long perspective aisles of the future, we catch a glimpse of a coming golden age; when every branch of natural science, every art, every weapon of obsolete warfare, shall contribute to bring the art of agriculture to perfection; when our vast area shall become one great, fertile garden, teeming with busy manufacturing villages and cities, and our keels shall plough every sea, transporting our surplus materials, enhanced in value by the cunning fingers of our artisans, and exchanging them for the products of the more favored climes. It is now in our power to hasten a consummation so devoutly to be wished, by promoting scientific education and diffusing intelligence, so that Maine, in accordance with her proud motto, shall take the lead in the onward career of progress and improvement."

Dr. Weston was also an occasional contributor of interesting articles to the agricultural and horticultural journals.

In 1872, when the "foot and mouth disease" among cattle, created serious alarm throughout the country, Dr. Weston was appointed by the Governor, under the special statute of that year, as one of the "Commissioners on Contagious Diseases among Cattle." His associates on this commission were the Hon. S. L. Goodale and the Hon. Joseph Percival. The action of the Commissioners was prompt and decisive, and happily the necessity which called for their appointment was of short duration.

Dr. Weston's memory will be especially cherished by the members of the Maine State Pomological Society. He took an active part in its establishment and the development of its work. He was ever ready to undertake the most difficult labors, and brought to their performance the same zeal and fidelity which distinguished all his undertakings. At the annual exhibitions he was almost invariably selected as chairman of some of the most important committees, and his awards were always judicious, discriminating and satisfactory. At each Winter Meeting he presented interesting papers, always attending in person when it was possible for him to do so. By the amendment of the By-Laws in 1874, it became his duty as Corresponding Secretary, to present "an annual report embracing a review of the proceedings of other and similar societies, with such extracts from their proceedings as he should deem to be of special interest," and he performed this duty with rare ability, making judicious selections and appropriate comments.

His interest in the Society, and his faith in its efficiency, were ever increasing, as his efforts in its behalf were self-sacrificing and continuous.

But a few days before his last illness, Dr. Weston prepared and forwarded to the writer of this, the tribute to the memory of his friend Mr. Noyes, which precedes this notice. That and the revision of the proofs of the valuable paper on "Lawns and Landscape Gardening," published in connection with his annual report in this volume, were among the last labors of his life. No words could more fitly describe his own rural tastes, his interest in horticultural pursuits and general agriculture, his attachment to his own beautiful home and his fidelity to every public trust, than those in which he speaks of his lamented friend.

The decease, almost simultaneously, of two of our original and prominent members, resident of the same city and so much alike in the characteristics above alluded to, is an event of sad and peculiar interest to this Society.

Shortly before his last sickness, Dr. Weston had made arrangements for the preparation of a view and plan of his residence and grounds, designed for publication in this volume, in accordance with the vote of the Society at the last Winter Meeting, and was only waiting that the artist might catch in his perspective view the opening foliage of early spring upon the trees, and for warmer and pleasanter weather to enable him to make the necessary meas-

urements for the ground plan, when his labors were arrested by the attack of the insidious disease which proved fatal.* To him the brighter and pleasanter days of the opening summer came not. It was his to bid farewell to the opening buds of springtime, to take a last fond look at the structures and grounds which his skill had designed and beautified—the flowers and vines and trees which his hands had planted and trained with loving care. He rests from his labors, in the fruition of a well spent life and a sustaining hope.

The members of this Society, and especially those who were more intimately associated with him in the labors to which he was so enthusiastically devoted, desire to place on record their high appreciation of his character and services, and their heartfelt sympathy with his afflicted family.

* The plan was afterwards finished by Mrs. Weston, with artistic skill, and with strict fidelity to her husband's original intention.

DESCRIPTIVE CATALOGUE

OF THE

LEADING FRUITS OF THE STATE OF MAINE,

ADOPTED BY THE MAINE STATE POMOLOGICAL SOCIETY AS A GUIDE TO PLANTERS.

Plan of the Catalogue.

The names of varieties are given according to the nomenclature adopted by the Society, which is substantially that of "Downing's Fruits and Fruit Trees of America." A few leading synonyms are given, and these are placed in *italics* immediately under the name adopted by the Society.

In respect to apples the State is divided into three divisions, designated as the Northern, Central and Southern Divisions.

The northern division embraces northern Oxford, Franklin, Somerset, Piscataquis, Penobscot and Aroostook counties.

The central division embraces the remainder of Oxford, and Androscoggin, Kennebec, Waldo, Hancock and Washington counties.

The southern division embraces Cumberland, Sagadahoc, Lincoln, Knox and York counties.

The explanation of the abbreviations and signs used in the several tabular columns is prefixed to the list of varieties in each of the respective classes of fruits.

The list of apples embraces many varieties not recommended, but by no means all that are grown in the State. The lists of other fruits embrace only such as are recommended to some extent.

Cultivators are requested to note carefully any errors which may be found in the catalogue, or any well founded opinions derived from their observation and experience differing from the conclusions therein indicated, in order to report the same at future meetings of the Society, with the view to make the catalogue as nearly perfect as possible.

I — APPLES.

EXPLANATION OF ABBREVIATIONS AND SIGNS.

In the column of "Size" l. stands for large; m. for medium; s. for small; l. m. for large medium, and s. m. for small medium. In the column of "Quality" b signifies best; v. g. very good; g. good, and p. poor. In the column of "Use" C stands for cooking; F. family use—cooking, baking, &c.; D. desert, and M. market. In the column of "Season" S. signifies summer; E. A. early autumn; A. autumn; L. A. late autumn; E. W. early winter; W. winter, and Sp. spring; In the column devoted to the several

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
1	Alexander.....	l.	p.	C.	A.	h. r.
2	American Summer Pearmain.....	m.	b.	D.	E. A.	-
3	American Golden Russet..... <i>Golden Russet.</i>	s.	b.	D.	E. A.	-
4	American Golden Pippin.....	m.	v. g.	-	W.	-
5	Baldwin.....	m.	g.	M.	W.	†
6	Beauty of Kent.....	l.	p.	M.	W.	-
7	Benoni.....	m.	v. g.	D.	E. A.	r.
8	Black Oxford.....	s.	g.	-	L. W.	r.
9	Blue Pearmain.....	l.	v. g.	M.	E. W.	-
10	Brigg's Auburn.....	l.	v. g.	D.	A.	-
11	Canada Reinette.....	l.	v. g.	M.	W.	h. r.
12	Cole's Quince.....	l.	b.	D.	S.	h. r.
13	Congress.....	l.	g.	M.	A.	-
14	Danvers Winter Sweet.....	m.	g.	F.	L. W.	-
15	Dean..... <i>Nine Ounce.</i>	m.	b.	D.	A.	h. r.
16	Duchess of Oldenburg..... <i>New Brunswick.</i>	l. -	g. -	C. -	A. -	h. r. -
17	Early Harvest.....	m.	v. g.	D. C.	S.	-
18	Early Strawberry.....	s.	v. g.	D.	S.	-
19	Early Pennock.....	m.	b.	D.	A.	-
20	English Sweet..... <i>Ramsdell's Red Sweet.</i>	m.	v. g.	M.	E. W.	r.
21	Esopus Spitzenburg.....	m.	v. g.	M.	W.	†

II — APPLES, *Continued.*

divisions, h. r. signifies highly recommended; r. recommended; † not recommended; ? introduced but not fully and extensively tested; blank, nothing reliable known of the variety in the division under which such blank is found. The letters *Am* in the column of Remarks indicate that the variety to which they are affixed is included in the Amateur List (pages 62-4.)

It should be borne in mind that any recommendation is for the special use designated in the column of "Use."

Number.	Central Division.	Southern Division.	REMARKS.
1	†	†	Hardy, productive, and showy. Succeeds well in high latitudes.
2	-	-	Not extensively grown. Limited trial proves well. In Kennebec reported a good bearer. <i>Am</i> .
3	r.	r.	Excellent dessert apple. Prolific. Several varieties are erroneously grown under this name.
4	-	?	An old variety. Never extensively tried in this State.
5	h. r.	h. r.	Tender—should be planted on high land.
6	?	?	
7	r.	r.	Highly recommended by many.
8	†	†	Hardy and productive—inclined to overbear. Not good for cooking, hence not popular in market.
9	r.	r.	Reported by some to succeed well in Northern Division.
10	r.	-	A native of Androscoggin county. Popular wherever tried.
11	-	-	Hardy. Succeeds well where tried in Aroostook county.
12	r.	r.	
13	r.	-	
14	†	†	A late keeping sweet apple—not very popular. Has been generally superseded by other varieties.
15	r.	?	A popular apple wherever known. Productive. <i>Am</i> .
16	r.	?	Hardy in Northern Division. For extreme north cannot be too highly commended.
-	-	-	Claimed by some to be a distinct variety—a seedling of Duchess of Oldenburg.
17	r.	r.	Under good cultivation one of the most desirable early apples. Quite tart unless fully ripe. <i>Am</i> .
18	r.	r.	
19	h. r.	-	One of the most popular in market where known, as a dessert apple. Good bearer.
27	?	-	Popular in some sections. Not extensively tested in Maine. Recommended by those who have tried it.
21	†	†	Excellent, but not productive enough to be recommended. Extensively tried, yet not popular when profit is the test.

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
22	English Russet.....	m.	g.	M.	W.	r.
23	English Russet..... <i>Poughkeepsie Russet.</i>	s.	v. g.	M.	Sp.	-
24	Fameuse ..	s.	v. g.	D.	E. W.	h. r.
25	Fall Harvey..... <i>Harvey.</i>	l.	g.	M.	L. A.	r.
26	Fall Pippin	l.	v. g.	M.	E. W.	r.
27	Fall Jenning.....	l.	v. g.	M.	A.	-
28	Foundling	m.	g.	D.	A.	-
29	Franklin Sweet.....	l.	b.	F.	A.	-
30	Garden Royal.....	s.	b.	D.	A.	-
31	Gloria Mundi.....	l.	v. g.	D. M.	A.	-
32	Golden Ball	l.	g.	C. M.	E. W.	†
33	Gravenstein	l. m.	v. g.	C. M.	A.	h. r.
34	Granite Beauty.....	l.	v. g.	M.	W.	-
35	Hightop Sweet	s.	v. g.	F.	A.	r.
36	Hoyt Sweet.....	m.	b.	F.	W.	-
37	Hubbardston Nonsuch	l. m.	b.	F. M.	E. W.	h. r.
38	Hurlbut.....	m.	v. g.	M.	W.	-
39	Jewett's Fine Red	s. m.	b.	D.	L. A.	r.
	<i>Nodhead.</i>					
40	Jefferis	m.	v. g.	D.	A.	-
41	Jonathan	m.	v. g.	D.	W.	-
42	Kilham Hill.....	m.	g.	M.	W.	-
43	King of Tompkins County.....	l.	b.	M.	W.	?
44	King Sweeting	m.	b.	F.	S.	h. r.
45	Large Yellow Bough..... <i>Sweet Bough.</i>	l.	g.	M.	S.	-
46	London Pippin.....	l.	g.	M.	W.	?
47	Maiden's Blush	m.	g.	M.	A.	-
48	Minister.....	m.	v. g.	D. M.	W.	-
49	Milding.....	l.	v. g.	M.	W.	-

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
22	r.	r.	This is not the English Russet of the books. Good grower—productive. Quality hardly “good.”
23	r.	r.	A valuable late keeper. Not so large as Roxbury Russet, but succeeds on soils where that fails.
24	r.	r.	Very hardy.
25	r.	r.	Supposed to be identical with Harvey. A fine fruit. Succeeds well in Northern Oxford and in Franklin.
26	—	?	
27	?	—	Quite extensively introduced with early importations of New York nursery stock.
28	?	?	
29	r.	r.	An excellent sweet apple for family use.
30	r.	r.	Can hardly be recommended for general cultivation. Too small for market.
31	h. r.	—	Not that of the books. Extensively grown in the central part of the State, and wherever grown is a popular apple.
32	†	r.	Two or more varieties are grown in the State under this name. The one here described is the true Golden Ball of Downing. An early and annual bearer; tree vigorous and hardy. The description in the first catalogue was erroneous.
33	h. r.	h. r.	Reported a shy bearer in Piscataquis. <i>Am.</i>
34	?	?	Not extensively introduced. Promises well.
35	h. r.	h. r.	
36	?	?	An excellent winter sweet apple. <i>Am.</i>
37	h. r.	h. r.	<i>Am.</i>
38	r.	r.	
39	r.	r.	Under high cultivation profitable—otherwise fruit imperfect. Best known in this State by the synonym. <i>Am.</i>
40	—	?	Not extensively grown in this State.
41	—	?	Excellent dessert apple. Not much grown in this State.
42	†	†	Not generally popular, but regarded favorably in Waldo.
43	?	?	Is not fully proved. With many does not prove desirable.
44	h. r.	h. r.	Origin, Sidney, Maine. Valuable for family use. <i>Am.</i>
45	r.	r.	Valuable chiefly because so early. When fully ripe quality “very good.”
46	—	—	
47	†	—	A very handsome apple.
48	r.	r.	An early, great and continuous bearer.
49	?	—	A new variety from New Hampshire. Promises well

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
50	Moses Wood.....	m.	v. g.	C. D.	S. & A.	-
51	Mother.....	m.	b.	D.	E. W.	-
52	Mountain Sweet.....	m.	g.	M.	W.	-
53	Naked-limbed Greening.....	m.	g.	M.	W.	h. r.
54	Northern Spy.....	l.	b.	M. D.	W.	r.
55	Orange Sweet.....	m.	v. g.	M.	A.	r.
56	Peck's Pleasant.....	m.	v. g.	D.	W.	-
57	Pomme Royale.....	m.	b.	D.	A.	-
58	Porter.....	m.	v. g.	M.	A.	r.
59	President.....	l.	g.	M.	A.	-
60	Primate.....	m.	b.	D.	S.	-
61	Pumpkin Sweet.....	l.	b.	F.	L. A.	r.
62	Rambo.....	m.	v. g.	M.	W.	-
63	Red Astrachan.....	m.	v. g.	F. M.	S.	h. r.
64	Red Canada..... <i>Old Nonsuch.</i>	m.	v. g.	D.	W.	†
65	Ribston Pippin.....	m.	v. g.	D. M.	W.	-
66	Rhode Island Greening.....	l.	b.	M.	W.	†
67	Rolfe..... <i>Macomber.</i>	l.	g.	M.	W.	r.
68	Roxbury Russet.....	m.	g.	M.	Sp.	†
69	Sarah.....	l.	g.	C.	A.	r.
70	Sops of Wine..... <i>Bell's Early.</i>	m.	g.	M.	S.	r.
71	Somerset.....	l.	b.	D. M.	A.	h. r.
72	Starkey.....	m.	b.	D. M.	L. A.	-
73	Superb Sweet.....	m.	b.	D. M.	A.	-
74	Sweet Russet.....	l.	v. g.	F. M.	E. W.	-

APPLES—*Continued.*

Number.	Central Division.	Southern Division.	REMARKS.
50	r.	r.	
51	r.	r.	A choice dessert apple. Tree considered a little tender, though Cole calls it perfectly hardy. <i>Am.</i>
52	r.	-	A new variety. Origin, Greene, Me. Promising.
53	h. r.	-	Grown extensively in Waldo county.
54	h. r.	h. r.	Slow to come into bearing, but when it does, under high cultivation, proves desirable. <i>Am.</i>
55	r.	-	Highly recommended by many.
56	?	?	<i>Am.</i>
57	?	-	<i>Am.</i>
58	h. r.	h. r.	<i>Am.</i>
59	r.	r.	
60	r.	r.	Strong grower and abundant bearer. <i>Am.</i>
61	h. r.	h. r.	Good for baking,—very sweet. Also good market apple. Succeeds well in portions of Northern Division.
62	?	?	Popular in the West. Not fully proved here.
63	h. r.	h. r.	Popular everywhere. Quite tart unless fully ripe.
64	†	r.	Not as profitable as many other newer varieties. <i>Am.</i>
65	†	†	Not universally profitable. In some localities proves a good bearer.
66	h. r.	h. r.	
67	-	-	Native of Abbott, Piscataquis county. Desirable in that locality and promising elsewhere.
68	r.	r.	Cannot be generally recommended for all localities. On soils adapted to it, proves one of the most profitable. On other soils it is a very poor bearer. Needs high cultivation.
69	-	-	Native of Wilton. Great bearer.
70	r.	r.	Extensively grown and best known by the synonym. Hardy, productive and profitable.
71	h. r.	h. r.	Native of Mercer. Showy. Fruit every way valuable. Said by some to drop badly.
72	h. r.	?	Native of Vassalboro', where it is extensively grown, and called one of the most profitable. Quality among the best. <i>Am.</i>
73	r.	-	An excellent apple, though not extensively grown.
74	?	?	There are many kinds grown under this name, with nothing to recommend them but their late keeping and their exceeding sweetness. This variety is large and has much to recommend it as an early winter sweet apple. Good for baking.

CATALOGUE OF

Number.	NAMES.	Size.	Quality.	Use.	Season.	Northern Division.
75	Swaar	l.	v. g.	M.	W.	?
76	Summer Sweet Paradise.....	l.	v. g.	F. M.	E. A.	-
77	Talman's Sweet	m.	v. g.	F. M.	W.	h. r.
78	Tetofsky	s.	b.	D.	S.	h. r.
79	Thompson.....	m.	v. g.	M.	E. A.	†
80	Twenty Ounce	l.	p.	C.	L. A.	†
	<i>Cayuga Red Streak.</i>		.			
81	Wagener	l. m.	v. g.	M.	W.	-
82	Williams' Favorite	l.	g.	M.	S.	r.
83	Winthrop Greening.....	l.	b.	F. M.	A.	-
84	Yellow Bellflower.....	m.	b.	D. M.	W.	h. r.
85	Yellow Newtown Pippin.....	m.	b.	D.	W.	-
	<i>Albemarle Pippin.</i>					

APPLES—*Concluded.*

Number.	Central Division.	Southern Division.	REMARKS.
75	?	?	
76	?	-	An old variety. A desirable early sweet apple. Not widely grown.
77	h. r.	h. r.	More extensively grown than any other winter sweet apple. Tree hardy, prolific. <i>Am.</i>
78	r.	r.	Tree hardy everywhere.
79	†	†	A good fruit. Tree not a free grower nor abundant bearer, and for these reasons cannot be recommended.
80	†	†	Large, coarse, acid, not rich.
81	?	r.	Late keeper. Skin thin and tough. Flesh crisp, aromatic.
82	h. r.	h. r.	Succeeds well in portions of Northern Division.
83	r.	r.	One of our best native varieties. Desirable in many respects. <i>Am.</i>
84	r.	r.	Hardy, giving good satisfaction in many localities. On favorable soils an abundant bearer, when it is crisp, juicy and rich.
85	?	?	When not well grown, quality as inferior as its size. Not extensively grown. In some instances proving well.

III—PEARS.

The columns explain as follows: "Size"—s., small; m., medium; l., large. "Form"—p., pyriform; ob. p., obtuse pyriform; ob. o. p., oblong obtuse pyriform; r., roundish; r. ob., roundish obtuse. "Color"—y. g., yellowish green; y. g. r., yellowish green with red cheek; y. r., yellow russet; y., yellow. "Quality"—g. good; v. g., very good; b., best. "Use"—F., family; F. M., family and market; M., market; K., kitchen. "Season"—S., summer; A., autumn; E. A., early autumn; L. A., late autumn; W., winter. The letter q affixed to the name of a variety indicates that it is adapted to be grown on the quince stock.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bartlett.....	l.	ob. o. p.	y.	v. g.	F. M.	E. A.
2	Belle Lucrative, q.....	m.	r. o. p.	y. g.	b.	F.	E. A.
3	Beurre Bosq.....	l.	p.	y. r.	b.	F. M.	L. A.
4	Beurre Clairgeau.....	l.	p.	y. r.	g.	M.	L. A.
5	Beurre d'Anjou, q.....	l.	ob. p.	y. g. r.	b.	F. M.	L. A.
6	Beurre Diel, q.....	l.	r. ob. p.	y. r.	v. g.	F. M.	L. A.
7	Beurre Giffard, q.....	m.	p.	y. g.	v. g.	F. M.	S.
8	Beurre Superfin, q.....	m.	r. p.	y. r.	v. g.	F.	A.
9	Beurre Hardy, q.....	l.	ob. p.	y. g.	g.	F. M.	A.
10	Clapp's Favorite, q.....	l.	ob. o. p.	y. g. r.	v. g.	F. M.	E. A.
11	Dearborn's Seedling.....	s.	r. p.	y.	v. g.	F. M.	E. A.
12	Doyenne d'Ete.....	s.	r. o. p.	y. g. r.	v. g.	F.	S.
13	Duchess d'Angouleme, q..	l.	ob. o. p.	y.	v. g.	F. M.	L. A.
14	Eastern Belle.....	m.	r. o. p.	y.	b.	F.	A.
15	Fulton.....	s.	r. ob.	y. r.	b.	F. M.	A.
16	Glout Morceau, q.....	l.	ob. p.	y.	g.	—	L. A.
17	Goodale.....	l.	ob. o. p.	y. g.	v. g.	F. M.	A.
18	Howell, q.....	l.	r. p.	y. g.	v. g.	F. M.	A.
19	Lawrence.....	m.	r. o. p.	y. g. r.	v. g.	F.	W.
20	Louise Bonne de Jersey, q.	l.	ob. p.	y. g.	v. g.	F. M.	A.
21	Manning's Elizabeth.....	s.	ob. p.	y. r.	v. g.	F.	S.
22	Rostiezer.....	s.	p.	y. g. r.	b.	F.	E. A.
23	Sheldon.....	m.	r.	y. r.	v. g.	F. M.	A.
24	Urbaniste, q.....	m.	p.	y. g.	v. g.	F. M.	L. A.
25	Vicar of Winkfield, q....	l.	p.	y. g.	g.	K. M.	W.
26	Winter Nelis.....	s.	ob. p.	y. r.	b.	F.	W.

REMARKS ON THE LIST OF PEARS.

Nos. 10, 11, 14, 15, 17, 18, 19 and 23, are of American origin; the others foreign. Nos. 14, 15 and 17 are native of Maine.

No. 1—*Bartlett*. Tree somewhat tender, and hence liable to injury from sudden changes of temperature in winter.

No. 2—*Belle Lucrative*. One of the best at its season as a single variety for home use.

No. 3—*Beurre Bosq*. Tree vigorous and a regular bearer. Fruit generally perfect and of uniform size and high color.

No. 4—*Beurre Clairgeau*. Succeeds best on light, warm soils. Forms a fine, thrifty tree, and bears early. Valuable for market.

No. 5—*Beurre d'Anjou*. In some localities bears lightly,—otherwise nearly faultless, both in tree and fruit.

No. 6—*Beurre Diel*. First rate in every respect in favorable situations; but on young trees and in cold soils the fruit is apt to be coarse and astringent.

No. 7—*Beurre Giffard*. Tree of moderate growth, spreading, slender. Like all early pears, this should be gathered before fully ripe, otherwise it is liable to lack quality and decay at the core.

No. 8—*Beurre Superfin*. Trees very healthy—inclined to be thorny. Not an early bearer.

No. 9—*Beurre Hardy*. Trees remarkably vigorous.

No. 10—*Clapp's Favorite*. Fruit showy and attractive. Tree a vigorous grower. Very popular.

No. 11—*Dearborn's Seedling*. Regular and abundant bearer. Fruit sweet and sprightly in flavor.

No. 12—*Doyenne d' Ete*. Must be gathered before fully ripe.

No. 13—*Duchess d' Angouleme*. Gives its best fruit on quince stock, with garden culture.

No. 14—*Eastern Belle*. Native of Bangor. Promising.

No. 15—*Fulton*. Should be grafted into vigorous trees.

No. 16—*Glout Morceau*. Tree of spreading habit. Unreliable in heavy soils.

No. 17—*Goodale*. Very vigorous and productive; fruit having a short stem, is liable to blow off.

No. 18—*Howell*. Tree hardy, and an upright and free grower.

No. 19—*Lawrence*. Succeeds in more sandy soils than most pears.

No. 20—*Lousie Bonne de Jersey*. As No. 13.

No. 21—*Manning's Elizabeth*. A beautiful dessert fruit; desirable for amateurs; very productive; growth moderate.

No. 22—*Rostiezer*. Tree vigorous, but of irregular and straggly growth.

No. 23—*Sheldon*. Tree vigorous, hardy and a good bearer.

No. 24—*Urbaniste*. Of slow growth on quince, but when grown is one of the best in quality, and most permanent and productive.

No. 25—*Vicar of Winkfield*. The best cooking pear. When of large size, by suitable thinning, and ripened yellow, is good for eating.

No. 26—*Winter Nelis*. Should be grafted into vigorous trees.

III—QUINCES.

Angers. Fruit very large, oblate pyriform, yellowish, tender. This variety is grown and known chiefly as a stock for dwarf pears.

Apple or Orange. Fruit large, roundish, yellowish green, half tender. Valuable for home use or in market, for preserves, &c.

IV—PLUMS.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—r., roundish; o., oval; r. o., roundish oval; o. ob., oval obovate. "Color"—p., purplish or very dark; r., reddish or copper color; y., yellow; g. y., greenish yellow; y. r., yellowish with shades or spots of red. "Quality"—g., good; v. g., very good; b., best. "Use"—F., Family; M., market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Bavay's Green Gage..... <i>Reine Claude de Bavay</i>	l.	r.	g. y.	b.	F.	L.
2	Bleeker's Gage.....	m.	r. o.	y.	v. g.	F. M.	M.
3	Bradshaw.....	l.	o. ob.	r. p.	g.	M.	M.
4	Coe's Golden Drop.....	l.	o.	y. r.	v. g.	F. M.	L.
5	Coe's Late Red.....	m.	r.	p.	v. g.	F. M.	L.
6	Columbia.....	l.	r.	p.	g.	M.	M.
7	Damson.....	s.	o.	p.	g.	M.	L.
8	Duane's Purple.....	l.	o.	r. p.	g.	F. M.	E.
9	Green Gage.....	s.	r.	g. y.	b.	F.	M.
10	Huling's Superb.....	l.	r. o.	g. y.	g.	F. M.	M.
11	Imperial Gage.....	l.	o.	g. y.	b.	F. M.	M.
12	Jefferson.....	l.	o.	y. r.	b.	F. M.	M.
13	Lombard.....	m.	r. o.	r. p.	g.	M.	M.
14	McLaughlin.....	l.	r.	y. r.	b.	F. M.	M.
15	Purple Gage.....	m.	r.	p.	v. g.	F. M.	M.
16	Smith's Orleans.....	l.	o.	r. p.	v. g.	F. M.	M.
17	Washington.....	l.	r. o.	g. y.	v. g.	F. M.	E.
18	Yellow Egg..... <i>White Magnum Bonum</i>	l.	o.	y.	g.	F. M.	M.

V—CHERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—ob. h., obtuse heart shape; r. ob. h., roundish obtuse heart shape; r. h., roundish heart shape; r., roundish or round. "Color"—l. r., lively bright red; d. r., red, almost black; a. m., amber mottled with red; y. r., yellow ground shaded with red. "Class"—H., Hearts, or tender fleshed sweet cherries; B., Bigarreau, or firm fleshed; D., Dukes, having a character in tree and fruit midway between the Hearts and Morellos; M., Morellos, having acid fruit, and the trees of small, slender growth. "Use"—F., family, for dessert; F. M., family or market; K. M., cooking or market; M., market. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Color.	Class.	Use.	Season.
1	Belle de Choisy.....	m.	r.	a. m.	D.	F.	E. M.
2	Belle Magnifique.....	l.	r. h.	l. r.	D.	K. M.	L.
3	Black Heart.....	l.	r. h.	d. r.	II.	F. M.	M.
4	Black Tartarian.....	l.	r. h.	d. r.	II.	F. M.	M.
5	Coe's Transparent.....	m.	r.	a. m.	II.	F.	M.
6	Early Purple Guigne.....	m.	r. h.	d. r.	II.	F. M.	E.
7	Early Richmond.....	s.	r.	l. r.	M.	K. M.	E.
8	Elton.....	l.	r. h.	y. r.	B.	F. M.	M.
9	Governor Wood.....	l.	r. h.	y. r.	II.	F. M.	M.
10	Late Duke.....	l.	ob. h.	d. r.	D.	K. M.	L.
11	Louis Phillippe.....	l.	r.	d. r.	D.	K. M.	L.
12	May Duke.....	l.	r. ob. h.	d. r.	D.	K. M.	E.
13	Morello.....	l.	r. h.	d. r.	M.	K. M.	L.
14	Napoleon.....	l.	r. ob. h.	y. r.	B.	F. M.	M.
15	Reine Hortense.....	l.	r.	l. r.	D.	F. M.	L.

VI—NATIVE GRAPES.

ABBREVIATIONS: "Size"—with reference to the berry, l., large; m., medium; s., small. "Form"—with reference to bunch and berry, s. r., short bunch, round berry; l. r., large and round; m. r. o., medium bunch, roundish oval berry; m. r., medium bunch, round berry. "Color" (when fully ripe)—b., black, or nearly so; r., reddish; g., greenish white or yellowish. "Quality"—p., poor; g., good; v. g., very good; b. best. "Use"—T., Table; M., market; W., wine.

Number.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Allen's Hybrid	l.	l. r.	g.	v. g.	T. M.	M.
2	Adirondac	m.	m. r.	b.	v. g.	T.	E.
3	Agawam..... Rogers' No. 15.	l.	s. r. o.	r.	v. g.	-	M.
4	Black Hawk.....	m.	m. r.	b.	v. g.	-	M.
5	Clinton.....	s.	m. r.	b.	p.	T. W.	L.
6	Concord....	l.	l. r.	b.	g.	T. M. W.	M.
7	Creveling.....	m.	m. r. o.	b.	v. g.	T.	E.
8	Delaware.....	s.	s. r.	r.	b.	T. M. W.	E.
9	Diana.....	m.	s. r. o.	r.	v. g.	T. M.	L.
10	Eumelan.....	m.	r.	b.	g.	T.	M.
11	Hartford Prolific.....	l.	m. r. o.	b.	g.	M.	E.
12	Iona.....	m.	m. r. o.	r.	b.	T. M. W.	L.
13	Isabella.....	l.	m. r. o.	b.	g.	T. M.	L.
14	Israella.....	m.	s. r. o.	b.	p.	T.	M.
15	Lindley..... Rogers' No. 9.	m.	m. r. o.	r.	v. g.	T.	M.
16	Merrimack..... Rogers' No. 19.	l.	s. r.	b.	v. g.	M.	M.
17	Miles.....	s.	m. r.	b.	g.	T.	E.
18	Rebecca.....	m.	s. r.	g.	v. g.	T.	M.
19	Salem..... Rogers' No. 22.	l.	r.	p.	g.	M.	M.
20	Telegraph..... Christine.	l.	m. r. o.	b.	v. g.	T. M.	E.
21	Wilder..... Rogers' No. 4.	l.	l. r.	b.	v. g.	T. M.	M.

REMARKS ON THE LIST OF GRAPES.

No. 1—*Allen's Hybrid*. A luxuriant grower and abundant bearer, and when well ripened one of the most delicious varieties of the Sweetwater class; but rather too late to be recommended for general culture in this State.

No. 2—*Adirondac*. A feeble grower while young. Fruit free from pulp, and of fine flavor. Needs further trial. Not uniformly reliable thus far.

No. 3—*Agawam*. Very handsome, and a good keeping variety. Flavor rich, spicy and good.

No. 4—*Black Hawk*. A seedling of the Concord. Vine hardy and vigorous. Bunches compact, shouldered. Fruit juicy and sweet.

No. 5—*Clinton*. Fruit small, late and harsh. Valuable only for wine. Vine hardy. Not recommended.

No. 6—*Concord*. A free grower, and bears heavily, but does not generally mature its fruit in this State.

No. 7—*Creveling*. Of excellent quality, not rich, but entirely free from foxiness. Mildews badly in some localities.

No. 8—*Delaware*. Bunch and berry small, and not a good keeper, but in all other respects one of the most desirable varieties for general cultivation. Vine healthy and hardy, and an early and constant bearer. Requires rich soil and high culture.

No. 9—*Diana*. Rather late for Maine, but of fine quality, and the best keeping variety.

No. 10—*Eumelan*. Has not given full satisfaction in this State.

No. 11—*Hartford Prolific*. Early, hardy, vigorous and productive, but fruit ripens unevenly and drops from the bunch.

No. 12—*Iona*. Of high flavor and a good keeper, but too late for general cultivation in Maine. Requires rich, warm soil. Vine and foliage healthy.

No. 13—*Isabella*. An old, standard variety. Largely superseded by earlier and better sorts. A free grower, and hardy.

No. 14—*Israella*. A thick skinned variety and a good keeper. Not desirable, being of inferior quality.

No. 15—*Lindley*. One of the earliest and best of Rogers' hybrids. Bunch and berry handsome. Of good quality and excellent keeper.

No. 16—*Merrimack*. Ripens uniformly and well, and gives general satisfaction. Vigorous and productive.

No. 17—*Miles*. Very early. Fruit too small for market.

No. 18—*Rebecca*. Of fine flavor and keeps well. Of slender growth and tender when young, but a healthy grower when established.

No. 19—*Salem*. Not as reliable in this State, as the other well known varieties of the same class. Foliage liable to mildew. Flavor rich, aromatic and sweet. Needs further trial.

No. 20—*Telegraph*. Not much known in this State, but highly recommended elsewhere for earliness and general good qualities.

No. 21—*Wilder*. Vigorous. Foliage strong and healthy. Requires a strong, rich soil. A reliable and valuable variety but a little later than some others of its class.

VII—FOREIGN GRAPES.

The catalogue of the American Pomological Society contains thirty-three varieties of foreign grapes, nearly all of which, with many others, are grown in this State; and being cultivated exclusively under glass they are exempt from the variations induced by climate and soil, and therefore equally adapted to all localities. The description embraces color, flavor, season, and the character of the vinery—whether hot or cold—in which they may be grown. It is not perceived that the insertion of such a list will be of material service to cultivators of this class of grapes, the information which it would contain being within their reach in other forms; hence it is omitted.

VIII—BLACKBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—ob. c., oblong conic; ov., oval; ob. ov., oblong oval. "Quality"—v. g., very good; b., best. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form.	Quality.	Season.
1	Dorchester	m.	ob. c.	b.	M.
2	Kittatinny.....	l.	ov.	b.	M.
3	Wilson's Early	l.	ob. ov.	v. g.	E.

IX—C U R R A N T S .

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form of bunch"—m., medium; s., short. "Color"—r., red; b., black; w., white. "Quality"—a., acid; m. a., moderately acid; v. a., very acid. "Season"—E., early; M., medium; L., late.

Number.	NAMES.	Size.	Form of bunch.	Color.	Quality.	Season.
1	Black Naples.....	l.	s.	b.	m. a.	M.
2	Black Grape. <i>Ogden's Black</i>	l.	m.	b.	m. a.	M.
3	Cherry	l.	s.	r.	v. a.	M.
4	Imperial Red.....	l.	s.	r.	a.	M.
5	La Versailles.....	l.	s.	r.	a.	M.
6	White Grape.....	m.	m.	w.	m. a.	E.

2 Resembles Black Naples, but more vigorous and productive; fruit larger and of better quality. 3 Shy bearer, and very sour. 4 Generally supposed to be identical with No. 5; but inserted by vote of the Society for further investigation. 6 The best white currant.

X—GOOSEBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium; s., small. "Form"—o., oval; r. o., roundish oval. "Color"—r., reddish; g., greenish yellow. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality	Season.
1	Downing	m.	r. o.	g.	v. g.	M. L.
2	Houghton	s.	r. o.	r.	g.	E.
3	Smith's Improved	l.	o.	g.	v. g.	M.

1 Of upright habit, productive, desirable. 2 Drooping, vigorous. 3 New; promises well.

XI—RASPBERRIES.

ABBREVIATIONS: "Size"—l., large; m., medium. "Form"—r., roundish; c., conical; ob. c., obtuse conical. "Color"—r., reddish; p., purplish; y., yellow; b., black. "Quality"—g., good; v. g., very good; b., best. "Use"—M., market; F. M., family and market. "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality.	Use.	Season.
1	Clarke	l.	r.	r.	v. g.	F. M.	M.
2	Knevet's Giant	l.	ob. c.	r.	b.	F.	M.
3	Orange. <i>Brinckle's Orange</i>	l.	c.	y.	b.	F.	M.
4	Philadelphia	m.	r.	p.	g.	M.	E.
	CAP VARIETIES.						
5	Davison's Thornless	m.	r.	b.	g.	F. M.	E.
6	Golden Thornless	m.	r.	y.	g.	F.	M.
7	McCormick	m.	ob. c.	b.	v. g.	F. M.	L.
	<i>Mammoth Cluster.</i>						

1 Canes strong, vigorous and upright; more nearly hardy than any foreign kind; fruit rather soft, juicy, sweet and excellent; better for light soils than any other variety of its class. 2 Strong grower and very productive. 3 Fruit tender; valuable for family use. 4 Very productive. 7 Profitable for market.

XII—STRAWBERRIES.

ABBREVIATIONS: "Size"—l., large. "Form"—o. c., obtuse conical; r. c., roundish conical; r. o. c., roundish, obtuse conical. "Color"—b. s., bright scarlet; l. c., light crimson; d. c., deep crimson. "Quality"—g., good; v. g., very good. "Season"—E., early; M., medium; L., late.

No.	NAMES.	Size.	Form.	Color.	Quality.	Season.
1	Col. Cheney	m. to l.	r. c.	l. o.	v. g.	M. to L.
2	Hovey's Seedling	l.	r.	b. s.	v. g.	M.
3	Nicanor	m.	r. o. c.	b. s.	v. g.	E. to L.
4	President Wilder	l.	r. o. c.	b. s.	v. g.	M.
5	Triomphe de Gand	l.	o. c.	l. c.	g.	M.
6	Wilson's Albany	l.	r. c.	d. c.	g.	E. to L.

1 A promising new kind. Pistillate. 2 An old and highly valued sort. Pistillate. 3 New. Plants vigorous, moderately productive. Flesh firm, sweet and juicy. Fine for canning. 4 One of the best, of recent introduction. 5 Uneven in size. 6 Hardy and productive; of fair quality when fully ripe.

APPENDIX.

ACT OF INCORPORATION.

STATE OF MAINE.

IN THE YEAR OF OUR LORD ONE THOUSAND EIGHT HUNDRED AND SEVENTY-THREE.

An Act to Incorporate the Maine State Pomological Society.

Be it Enacted by the Senate and House of Representatives in Legislature assembled, as follows:

SECTION 1. Z. A. Gilbert, George W. Woodman, A. L. Simpson, George B. Sawyer, J. C. Weston, Charles Pope, Samuel Rolfe, James A. Varney, Albert Noyes, Rufus Prince, J. C. Madigan, S. F. Perley, Hannibal Belcher, J. B. Phillips, Joseph Taylor, Harvey Counce, John Currier, William Swett, Henry McLaughlin, Calvin Chamberlain, Washington Gilbert, George O. Weston, Hiram Chase, J. C. Talbot and S. L. Goodale, their associates and successors, are hereby constituted a corporation for the promotion of fruit culture, by the name of THE MAINE STATE POMOLOGICAL SOCIETY.

SEC. 2. Said society shall have all the rights, privileges and powers conferred by the laws of this State upon county and local agricultural societies, and shall be subject to all liabilities imposed by existing laws upon such societies, so far as the same are applicable to the objects of this society; but the bounty to be paid by the State to said society shall not exceed the sum of five hundred dollars in one year.

SEC. 3. Said society shall have power to elect such officers, and adopt such by-laws and regulations, not inconsistent with the laws of this State, as may be necessary to carry into effect the objects of the society.

SEC. 4. The first meeting of said society may be called by A. L. Simpson, J. C. Weston and Geo. B. Sawyer, by a notice signed by them, stating the time and place of said meeting, to be published two weeks successively in the *Maine Farmer*, the last publication to be seven days at least before the time of said meeting.

SEC. 5. This act shall take effect when approved.

[Approved February 17, 1873.]

BY-LAWS
OF THE
MAINE STATE POMOLOGICAL SOCIETY.

AS AMENDED JANUARY 29, 1874.

ARTICLE I.—MEMBERSHIP.

SECTION 1. Any person may become a member of this Society by signifying his wish to do so and paying to the Treasurer the sum of one dollar.

SEC. 2. Any person may become a life member by paying the Treasurer the sum of ten dollars; and the Treasurer's certificate thereof shall entitle such member, with his wife and minor children, to admission to all the exhibitions of the Society.

SEC. 3. Each member (excepting life members,) shall pay to the Treasurer an annual fee of one dollar; and the Treasurer's certificate thereof shall entitle him to admission to all the exhibitions of the Society for that year.

SEC. 4. Any member who shall neglect, for the term of two years, to pay his annual assessment, shall cease to be a member of the Society; and the Treasurer shall erase his name from the list of members. Any member may, at will, withdraw from the Society on giving notice to the Treasurer, and paying the amount due from him to the Society.

SEC. 5. Ten members shall constitute a quorum.

ARTICLE II.—OFFICERS.

SECTION 1. The officers of the Society shall consist of a President, two Vice Presidents, Secretary, Corresponding Secretary, Treasurer, and an Executive Committee, consisting of three members exclusive of the President and Secretary, who shall be members *ex-officio*, and one Trustee for each county in the State; all of whom shall be elected by ballot at the annual meetings, and hold their respective offices during the calendar year for which they shall be elected, and until their successors are elected. In the event of a failure to elect the said officers, or any of them, at such meeting, an election shall be held at the next meeting of the Society duly called and holden.

SEC. 2. All the officers shall perform the customary duties of their respective offices, and such further duties as are herein specified or shall from time to time be imposed upon them.

SEC. 3. The Secretary shall keep a true record of the proceedings of the Society and of the Executive Committee, keep an alphabetical list of the members, and make all reports required or authorized by law.

SEC. 4. The Corresponding Secretary shall conduct the correspondence of the Society. He shall open and maintain correspondence with other Pomological and Horticultural Societies for the purpose of effecting an exchange of publications with the same, for the permanent use of this Society; and shall present at each annual meeting, a report, embracing a review of the proceedings of such Societies, and the substance of all such matters therein as he shall deem to be of special interest to this Society.

SEC. 5. The Treasurer shall keep all moneys of the Society and disburse the same only upon the written orders of the Executive Committee. He shall render his accounts annually to the Executive Committee, and give such bond as said Committee may require. He shall keep a record of the names of the members of the Society, and shall from time to time transmit to the Secretary the names of all new members and of such persons as have ceased to be members.

SEC. 6. The Executive Committee shall have the general management and oversight of the affairs of the Society; transact its business, and appoint all standing and special committees, when not otherwise provided for; examine the accounts of the Treasurer, and make an annual report to the Society, of their doings and of the financial affairs of the Society.

SEC. 7. The Trustees shall represent the Society and act as its agents in their respective counties. They may receive applications for membership, and forward the same, with the fees therefor, to the Treasurer, and shall promote the interests of the Society in their respective counties.

SEC. 8. Whenever the office of President shall become vacant, the Vice Presidents shall succeed to his office, in the order of seniority, for the remainder of the year; and any vacancy occurring in any other office may be filled by appointment by the Executive Committee; the person so appointed holding the office for the remainder of the year.

ARTICLE III.—MEETINGS.

SECTION 1. The Annual Meeting of the Society shall be held at the place and during the time of the Annual Autumn State Exhibition, and such notice thereof shall be given as the Executive Committee shall direct. If, from any cause, the regular Annual Meeting shall not be held as above provided, a special meeting shall be held at Augusta in the month of January next following.

SEC. 2. Special meetings may be called at any time by the Executive Committee; of which meetings each member shall be notified, by a notice properly directed and deposited in some post office at least ten days prior to the time of such meeting.

ARTICLE IV.—FUNDS.

The fees for life membership shall constitute a permanent fund, to be safely invested by the Treasurer under the direction of the Executive Committee, and of which only the interest shall be used for the disbursements of the Society.

ARTICLE V.—AMENDMENTS.

These By-Laws, except Sec. 2 of Article 1, may be altered or amended at any annual meeting of the Society, by the concurrence of two-thirds of the members present, *provided, however*, that Article 4 shall not be so amended without notice given and entered on record at the preceding Annual Meeting.

TREASURER'S REPORT FOR THE YEAR 1876.

CHARLES S. POPE, TREASURER,

IN ACCOUNT WITH THE MAINE STATE POMOLOGICAL SOCIETY.

DR.

To cash in the treasury, January 1, 1876	\$13 10
amount received from the State, bounty for 1875	500 00
" " of Portland Horticultural Society on account of exhibition of 1875	21 17
" " of annual members	79 00
" " from sale of tickets at annual exhibition	143 80
" " " fruit " " 	3 25
" " for interest on permanent fund	21 60
" " on temporary loan	275 00
	\$1,056 92

CR.

By paid on loan of 1875	\$150 00
" interest on loans	21 73
" orders of Executive Committee, drawn in 1876	237 42
" " " " prior to " 	338 01
" on account of premiums of 1876	174 75
By cash in treasury, December 31, 1876	135 01
	\$1,056 92

CHARLES S. POPE, *Treasurer.*

Report of the Executive Committee for the year 1876.

To the Members of the Maine State Pomological Society:

The Executive Committee hereby report that they have examined the account of the Treasurer, for the year ending December 31, 1876, and have found the same to be correctly stated and properly vouched.

They have drawn orders on the Treasurer during the year as follows:

For outstanding bills of 1874 and 1875	\$5 50
Expenses of Winter Meeting, 1876	75 61
Printing and stationery	24 15
Postage, telegraph and express bills	27 71
Binding annual reports for 1875	8 92
Expenses of annual exhibition 1876,—printing, \$55.41; officers' dis- bursements, \$107.13; other expenses, \$127.71	290 25
	\$432 14

The officers have received no compensation except for actual expenses incurred in attending to the business of the Society.

The financial condition of the Society on the 30th day of December, 1876, was as follows :

ASSETS.

Cash in the treasury.....	\$135 01
Amount due from the State for 1876.....	500 00
Estimated amount of donated and forfeited premiums.....	60 00
Accrued interest on permanent fund.....	5 25
<i>Amount available as resources.....</i>	<u>\$700 26</u>
Permanent fund, deposited in Wiscasset Savings Bank.....	420 00
Property owned by the Society, estimated.....	100 00
<i>Total assets.....</i>	<u>\$1,220 26</u>

LIABILITIES.

Amount due on temporary loans.....	\$415 00
“ of orders drawn and unpaid.....	191 66
“ of bills for which orders have not been drawn, estimated..	60 00
“ of unpaid premiums.....	318 25
	<u>1,084 91</u>
<i>Balance, being excess of total assets above liabilities.....</i>	<u>\$135 35</u>
[Excess of liabilities over available resources, \$384.65.]	

By order of the Executive Committee.

GEO. B. SAWYER, *Secretary.*

MONMOUTH, January 23, 1877.

Members of the Society.

Including all names registered up to date of publication.

NOTE.—Changes of residence or errors should be promptly reported to the Secretary.

LIFE MEMBERS.

Atwood, Fred	Winterport	Gilbert, Z. A.	East Turner
Atherton, W. P	Hallowell	Godfrey, John E.....	Bangor
Atherton, H. N	Hallowell	Harlow, S. C.....	Bangor
Atkins, Charles G	Bucksport	*Harris, N. C.....	Auburn
Crosby, William C.....	Bangor	Hersey, T. C.....	Portland
Clark, Eliphalet.....	Portland	Ingalls, Henry	Wiscasset
Carter, Otis L	Etna	Jewett, George.....	Portland
Chase, Henry M.....	North Yarmouth	Low, Elijah.....	Bangor
Crafts, Moses.....	Auburn	Low, S. S.....	Bangor
Dyer, Milton.....	Cape Elizabeth	McLaughlin, Henry.....	Bangor
DeRocher, Peter.....	Waterville	Metcalf, M. J.....	Monmouth
Dirwanger, Joseph A	Portland	Moore, Willie G.....	Monmouth
Emerson, Albert.....	Bangor	Morton, Will E	Allen's Corner
Farnsworth, B. B.....	Portland	*Noyes, Albert.....	Bangor
Frost, Oscar F.....	Monmouth	Pope, Charles S.....	Manchester

* Deceased.

LIFE MEMBERS—CONCLUDED.

Rolfe, Samuel.....	Portland	Starrett, L. F.....	Warren
Richardson, J. M.....	Greene	Taylor, Joseph.....	Belgrade
Sawyer, George B.....	Wiscasset	Tilton, William S.....	Chelsea
Stetson, Isaiah.....	Bangor	Thomas, William W., jr.....	Portland
Smith, Alfred.....	Monmouth	Varney, James A.....	North Vassalboro'
Sawyer, Andrew S.....	Cape Elizabeth	Vickery, James.....	Portland
Smith, Henry S.....	Monmouth	Woodman, George W.....	Portland
Sweetser, S. R.....	Cumberland Centre	*Weston, James C.....	Bangor
Strattard, Mrs. A. B.....	Monroe	Wade, Patriok.....	Portland

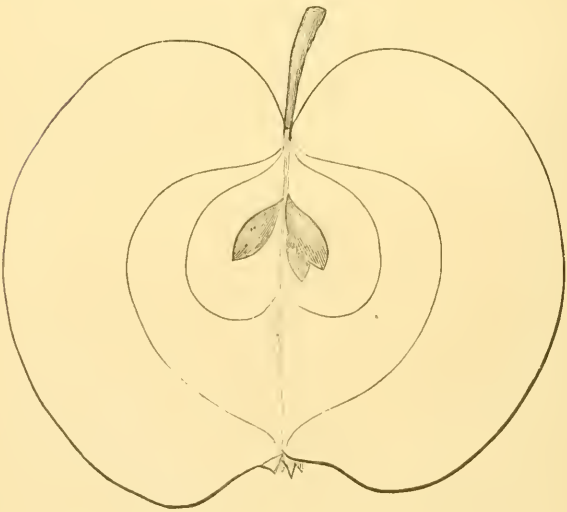
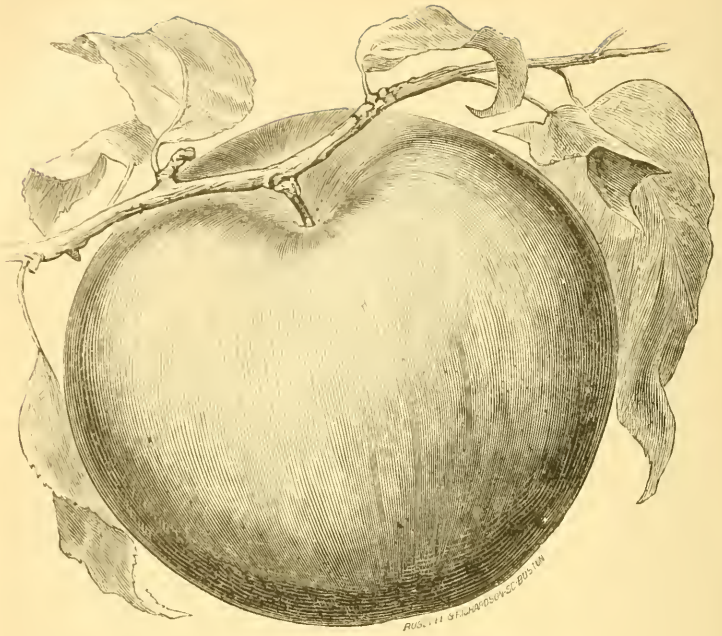
ANNUAL MEMBERS.

Abbott, Lyman F.....	Wilton	Carr, A. C.....	East Winthrop
Andrews, Geo. H.....	Monmouth	Dill, Seward.....	Phillips
Andrews, O. W.....	New Haven, Ct.	Dunnells, Z.....	Newfield
Ayer, Daniel.....	North Vassalboro'	Duffey, Patriek.....	Portland
Alden, Miss F. L.....	Waterville	Dorr, George W.....	Waterville
Allen, Lorenzo L.....	North Monmouth	Dunbar, Lemuel.....	Waterville
Boardman, Samuel L.....	Augusta	Eaton, Russell.....	Augusta
Bailey, S. D.....	Bath	Edwards, Mrs. W. W.....	Waterville
Blaney, Arnold.....	Bristol	Fuller, F. A.....	East Winthrop
Bell, James B.....	Augusta	Field, Jacob A.....	Lewiston
Badger, William S.....	Augusta	Fernald, Granville.....	Harrison
Bradford, Joseph.....	Portland	Gilbert, Washington.....	Bath
Bradford, A. E.....	Turner	Getchell, M. J.....	Winslow
Butler, E. K.....	Hallowell	Geding, John W.....	Monmouth
Brown, Phillip H.....	Portland	Gray, George W.....	Monmouth
Batchelder, Joseph.....	Yarmouth	Getchell, Ira E.....	Winslow
Berry, Stephen.....	Portland	Gould, Edward.....	Portland
Briggs, D. J.....	Turner	Guild, Samuel.....	Augusta
Boothby, L. T.....	Waterville	Gilman, J. E.....	Portland
Bickford, Crowell.....	Waterville	Garland, A. S.....	Carmel
Buffum, J. W.....	North Vassalboro'	Hight, B. M.....	Skowhegan
Bowman, Adrian.....	Waterville	Homan, J. A.....	Augusta
Brewster, Henry M.....	Curtis' Corner	Hoffes, Elmas..	Warren (P. O. Waldoboro')
Bragdon, Charles B.....	Monmouth	Haskell, Aretas.....	Pittsfield
Boynton, William H.....	Monmouth	Hanseom, John.....	Saco
Chamberlain, Calvin.....	Foxcroft	Hoffes, Joseph J. A.....	East Jefferson
Chamberlain, David.....	Bristol	Hussey, Moses H.....	North Berwick
Coe, Henry H.....	Portland	Hoxie, Galen.....	North Fairfield
Cobb, Elbridge L.....	East Deering	Hanson, J. H.....	Waterville
Carney, Franklin L.....	Newcastle	Heald, T. G.....	Waterville
Cumston, Charles M.....	Monmouth	Haskell, Mrs. F. W.....	Waterville
Carpenter, G. H.....	Waterville	Ham, John L.....	Lewiston
Crowell, A.....	Waterville	Hinkley, Oliver.....	Monmouth
Chamberlain, F. C.....	Waterville	Jones, Charles H.....	Warren
Conforth, Hiram.....	West Waterville	Jordan, Elder M.....	—
Cole, S. H.....	Lewiston	Johnson, J. A.....	Auburn
Clough, Geo. M.....	Monmouth	Libbey, Matthias.....	Portland

* Deceased.

ANNUAL MEMBERS — CONCLUDED.

Leland, S. R.....	Farmington	Richardson, M. W.....	Stevens Plains
Merrill, J. W.....	Portland	Rolfe, William T.....	Portland
Marshall, Isaac N.....	New Bedford, Mass.	Robinson, H. A.....	Foxcroft
Mattocks, C. P.....	Portland	Robinson, David B.....	Auburn
Marston, Daniel E.....	Monmouth	Runnells, Fred. W.....	Clinton
Marston, David ..	Monmouth	Reynolds, John, jr.....	Clinton
McFadden, C. R.....	Waterville	Simmons, H. J. A.....	Waldoboro'
Marston, S. C.....	Waterville	Spaulding, Benjamin.....	Augusta
Muzzy, Horace.....	Searsmont	Sherburne, C. S.....	Prospect Ferry
Nowell, Frank E.....	Fairfield	Stanley, Charles.....	Winthrod
North, James W., jr.....	Augusta	Sprague, H. A.....	Charlotte
O'Brien, E. C.....	Deering	Sweetser, A. S.....	Cumberland Center
Oak, Nathaniel.....	Exeter	Sparrow, Frank W.....	Deering
Pope, Jacob... ..	Manchester	Sampson, Charles.....	New Gloucester
Pike, N. R.....	Winthrop	Taber, Henry.....	Vassalboro'
Perkins, L. J.....	Deering	Tilley, Henry.....	Castle Hill
Parker, B. F.....	Livermore Falls	Taylor, William A.....	Portland
Parker, Henry D.....	Livermore Falls	True, N. T.....	Bethel
Pulsifer, D. W.....	East Poland	Woodward, F. M.....	Winthrop
Percival, Joseph.....	Waterville	Wilson, Minot M.....	Bowdoinham
Plaisted, J. H.....	Waterville	Woodman, Alfred.....	Portland
Pearson, Wm. H.....	Vassalboro'	Whitney, Edward K.....	Harrison
Prescott, M. B.....	Monmouth	Webb, E. F.....	Waterville
Riggs, John A.....	North Georgetown	Winslow, J. N.....	Portland
Rand, Sumner C.....	Portland	Young, Edward J....	Acton (P. O. Horne's Mills, N. H.)
Rice, Charles R.....	Somerville		



THE STARKEY APPLE.

FIFTH ANNUAL REPORT

OF THE

SECRETARY

OF THE

MAINE STATE POMOLOGICAL SOCIETY,

FOR THE YEAR

1877;

Including the Transactions of the Winter Meeting, held at Winthrop,
February 27, 28, and March 1, 1878.



AUGUSTA:

PRESS OF SPRAGUE, OWEN & NASH.

1878.

———"What though not all
Of mortal offspring can attain the heights
Of envied life; though only few possess
Patrician treasures, or imperial state;
Yet Nature's care — to all her children just —
With richer treasures, and an ampler state,
Endows at large whatever happy man
Will deign to use them." * * * * *

"For him the spring
Distils her dews, and from the silken gem
Its lucid leaves unfolds; for him the hand
Of autumn tinges every fertile branch
With blooming gold, and blushes like the morn."
* * * * * "Thus the men
Whom Nature's works can charm, with God himself
Hold converse; grow familiar, day by day,
With his conceptions; act upon his plan;
And form to his the relish of their souls." — *Akenside*.

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MAINE STATE POMOLOGICAL SOCIETY.

OFFICERS FOR THE YEAR 1878.

PRESIDENT:

Z. A. GILBERT East Turner.

VICE PRESIDENTS:

ANDREW S. SAWYER, Cape Elizabeth.

JOSEPH TAYLOR, Belgrade.

SECRETARY:

GEORGE B. SAWYER, Wiscasset.

TREASURER:

CHARLES S. POPE, Manchester.

EXECUTIVE COMMITTEE:

The President and Secretary, *ex officio*; SAMUEL ROLFE, Portland; JAMES A. VARNEY, North Vassalboro'; HENRY McLAUGHLIN, Bangor.

TRUSTEES:

D. J. Briggs, Turner, Androscoggin county; Henry Tilley, Castle Hill, Aroostook county; Henry M. Chase, North Yarmouth, Cumberland county; S. R. Leland, Farmington, Franklin county; C. G. Atkins, Bucksport, Hancock county; William H. Pearson, Vassalboro', Kennebec county; Charles H. Jones, Warren, Knox county; H. J. A. Simmons, Waldoboro', Lincoln county; Dr. N. T. True, Bethel, Oxford county; S. C. Harlow, Bangor, Penobscot county; H. A. Robinson, Foxcroft, Piscataquis county; Washington Gilbert, Bath, Sagadahoc county; Galen Hoxie, North Fairfield, Somerset county; J. W. Lang, Brooks, Waldo county; H. A. Sprague, Charlotte, Washington county; John Hanscom, Biddeford, York county.

STENOGRAPHER:

WILLIAM G. MOORE, Monmouth.

COUNTY COMMITTEES

Chosen at the Winter Meeting, March 1, 1878. [Page 86.]

Androscoggin—D. W. Pulsifer, East Poland.

Aroostook—Columbus Hayford, Maysville.

Cumberland—Granville Fernald, Harrison.

Franklin—Lyman F. Abbott, Wilton.

Hancock— — —, — — —.

Kennebec—Alfred Smith, Monmouth; W. P. Atherton, Hallowell.

Knox—Elmas Hoffses, Warren, (P. O., Waldoboro'.)

Lincoln—C. R. Rice, Whitefield.

Oxford— — —, — — —.

Penobscot—John L. Leighton, Garland.

Piscataquis—H. L. Leland, Sangerville.

Sagadahoc—John A. Riggs, North Georgetown.

Somerset—S. T. Whittier, Athens.

Waldo—Horace Muzzy, Searsmont.

Washington— — —, — — —.

York—Edmund J. Young, Aeton.

COMMITTEE ON NOMENCLATURE.

Henry McLaughlin, Charles S. Pope, Samuel Rolfe.

COMMITTEE ON ENTOMOLOGY.

Prof. C. H. Fernald, George E. Brackett, Lyman F. Abbott.

Maine State Pomological Society.

TRANSACTIONS FOR 1877.

The Secretary of the Maine State Pomological Society herewith presents his report of the Transactions of the Society for the year 1877.

This Society was incorporated and organized in the winter of 1873, and has held five annual exhibitions, and the same number of Winter Meetings,—so located as to make the benefits to be derived from them, as far as possible, available to all the people of the State; and in these efforts it has received a considerable degree of encouragement,—as much perhaps as it has deserved, but not as much as the importance of its work demands.

It has published four annual reports of its Transactions, (prior to this one) which have been received with much favor both at home and abroad. These reports, averaging 153 pages each, embrace a vast amount of information indispensable to every fruit grower, horticulturist and florist in Maine, and of interest to every citizen of the State,—in the form of practical papers, by our best cultivators, on all subjects relating to fruit growing, reports on subjects of special interest, results of experiments, lists of varieties for different purposes, recommended or otherwise, descriptive lists of fruits, etc.

It is presumed that the general purposes of the Society, as indicated by its name, and epitomized in the charter in the words "the promotion of fruit-culture," and the established methods by which it seeks to accomplish these purposes are so well understood as to need no more particular statement at this time.

THE WORK OF THE SOCIETY

During the past year, beginning at the close of the Winter Meeting of 1877, and ending with that of 1878, has followed in the same general methods as in previous years, and while seeking as far as possible to avoid falling into a mere lifeless routine, by the adoption or trial of every improvement suggested by observation or experience, we have found much in the details of the work that could not be changed for the better.

It cannot be expected that an organization composed of persons engaged in the various avocations of active life, and but few of them able to make Pomology a leading pursuit, can present themselves before the public year after year without saying much that will appear repetitious. Hence it is, that, saying nothing of the material prosperity of the Society, we need a constant accession of new members. On the other hand, it may be said that the principles which lie at the foundation of successful fruit culture in this State, are of such vital importance that they cannot be too often repeated or too constantly kept in mind.

Aside from the annual exhibition and winter meeting, the details of which will be given in subsequent pages, the most important undertaking of the year has been that of collecting and publishing full and accurate statistics of the nursery business of the State, embracing the number, kinds, age, condition and location of fruit trees *grown in the State* for sale. The Society has from the first taken a decided stand in favor of the home production of trees to supply the wants of the people of the State,—not only to secure stock better adapted to our soil and climate, and more generally of suitable varieties, but also to stop the enormous drain of money, amounting to many thousands of dollars annually, sent out of the State for the purchase of all sorts of trees known and unknown; and it will be remembered that at the first Winter Meeting (1874), the subject was fully considered and discussed by the best orchardists of the State, and a resolution was adopted "that Maine can and ought to grow her own fruit

trees." This principle has been adhered to ever since, and repeated and enforced on every proper occasion. The State Board of Agriculture, also, opportunely coming to our aid, and acting under the authority vested in it by the statute law, some three years ago directed that the several county agricultural societies receiving bounty from the State, should offer certain specified premiums for the planting of new orchards and the growing of native nursery stock. No special report of the operations of the county societies under these instructions has been made other than appears in their yearly doings in the report of the Board. This Society therefore thought it proper to undertake a *census of the nursery business*, which it was known had attained considerable proportions. Accordingly circulars were issued and notices given through the newspapers, calling for the information desired; and the President of the Society undertook the task of collating and verifying the statistics by personal correspondence and observation. The result will appear in his special report at the Winter Meeting, and though far from being complete, are sufficient to indicate that the business is no longer an experiment with respect to its *practicability*. They also show that there are trees enough grown in the State and now ready for market, to supply our immediate wants, and more than will, as a matter of fact, in any given year, with our present degree of pomological knowledge be judiciously planted and taken care of. The publication of these statistics, though not intended in any sense as an advertisement of the parties named, will, if it should inure to their benefit, be no more than a just reward for their enterprise and skill.

The library of the Society has received considerable additions by means of the exchange of publications with other societies, which will together with the correspondence of the Secretary, be made the subject of a special report hereafter.

At the last Winter Meeting arrangements were made to obtain more full information in respect to the business of fruit growing in the several counties, and to bring the Society

into more immediate contact with the people throughout the State, by the appointment of county committees to act in conjunction with the several Trustees for that purpose.

A committee on entomology was also appointed, composed of gentlemen of great scientific attainments, from whom it is expected valuable reports will be hereafter presented, as a subject of the utmost importance in fruit growing.

No opportunity has presented itself during the year for a revision of the Society's fruit lists, but errors and imperfections have been noted when discovered, and a thorough revision will doubtless be made during the ensuing year.

For a record of the season of 1877 in respect to fruit growing, the obstacles met with and the degree of success attending the business, reference is made to the local reports subsequently given and notes accompanying the same; and for the financial reports, list of members and other matters of special interest to the members, to the appendix to this report.

THE FIFTH ANNUAL EXHIBITION

of the Society was held at Waterville, Kennebec county, September 25th-28th, 1877. There was some reason to believe that the partial failure (in a financial point of view) of our exhibition there the previous year was due solely to temporary and accidental causes, and that a second attempt in the same place, with a better acquaintance and a better understanding of our objects on the part of the local population, would result more favorably. Accordingly, the most ample preparations were made to insure success, and no effort was spared to make the exhibition attractive as well as instructive; it was thoroughly and seasonably advertised, and the railroads granted the usual liberal reduction of fares. The premium list was carefully revised, and the amount of premiums increased to \$1,111.00 besides \$40.00 offered in special premiums for cut flowers, &c., by James Vick of Rochester, N. Y. The arrangements made involved a larger

expenditure than ever before, but as on former occasions failed to bring out a correspondingly large attendance.


The exhibition was among the most complete, in the aggregate of the several departments represented, ever held in the State; fully occupying the main floor and a portion of the galleries of the town hall, besides the smaller hall in the basement; while that of the previous year was embraced in the floor of the main hall.

By the list of entries given below it will be seen that the exhibition was confined almost exclusively to fruits, vegetables and flowers, although there was a considerable display of horticultural appliances, ornamental work and miscellaneous articles, and the hall was further adorned with floral designs, pictures and other works of art. The display of apples, pears and grapes was especially fine, embracing many new varieties and but few inferior specimens, and reflected great credit upon the veteran exhibitors who have built up the reputation of the society in these departments, as well as upon the new exhibitors who appeared this year for the first time. Plums were not exhibited to any noticeable extent, owing to the lateness of the exhibition. Vegetables and garden crops were well represented and the specimens were of great excellence. Cut flowers, bouquets, wreaths, designs and pot plants were presented in great abundance and fine condition, and there were extensive displays of green-house plants and ferns.

The rules governing the exhibition having been considerably modified since their last publication in an annual report, are here presented in full.

1. Entries may be made at the office of the Secretary, in Wiscasset, personally, or by letter, until September 20th; and after that at the Hall, on the first day of the exhibition until 4 o'clock P. M.

2. Exhibitors are requested to present full and accurate lists of the varieties of fruits or other articles to be entered; and to specify the premium for which each article is entered; also to affix their full Christian names and P. O. address, so that the same may be correctly transferred to the books and exhibition cards.

 Persons intending to make any considerable number of entries will confer a special favor by sending lists of the same to the Secretary at an early day.

3. All fruits and flowers offered for premiums (except No. 1) must have been grown by the exhibitor; and any violation of this rule will debar or forfeit the premium. Specimens offered for *exhibition only*, by others than the growers, must in all cases have the name of the grower affixed, if known.

4. All fruits and flowers exhibited must, as far as possible, be correctly named according to the standard nomenclature adopted by the Society, and it will be the duty of the standing committees of the Society to examine labels and correct all errors in nomenclature during the exhibition.

5. All fruits offered for premiums must be composed of exactly the number of specimens, or quantity, named in the schedule.

6. Dishes and labels for exhibition of fruits, and phials and stands for cent flowers, will be furnished by the Society, and no others will be admissible.

7. Exhibitors must see to the delivery of their contributions and will be required to put them *in the places designated for them*. After the articles are arranged, they will be under the exclusive charge of the Society, and the owners will not have the liberty to remove them until the exhibition is closed. Every precaution will be taken for the safe keeping of articles on exhibition, after their arrival and arrangement upon the tables; but the Society will not be responsible for any loss or damage that may occur.

8. No premium will be awarded merely for want of competition, nor unless the article exhibited is worthy of it; and the Committees are authorized to withhold the first and award the second or any subsequent premium, or none, at their discretion, according to merit. They are also to withhold all premiums from any article not exhibited according to the rules, or where any unfair practice has been attempted by the exhibitor.

9. The Committees are authorized to recommend gratuities for any new or rare fruits, flowers, plants, vegetables or articles of merit for which no premiums have been offered.

10. When a specimen is presented for a name, the exhibitor shall communicate all the information he possesses as to the origin and the local appellation.

11. No member of any of the Committees for awarding premiums shall in any case, vote or decide respecting an award for which such member may be a competitor, or therein have an interest; but in such case such member shall temporarily vacate his place upon the Committee.

12. All premiums awarded will be payable by the Treasurer in thirty days after the close of the exhibition, provided that all premiums awarded will be liable to a *pro rata* reduction sufficient to meet any deficiency that may occur in the receipts, to meet said premiums and other expenses; and those not applied for before the first day of January next shall revert to the Society.

13. The Society's premiums are open for competition to all persons residing in the State; but when premiums less than \$20.00 are awarded to a person not a member of the Society, the fee for membership will be

deducted therefrom; and when premiums amounting to \$20.00 or more are awarded to any person not a life member of the Society, the fee for life membership will be deducted therefrom; and in either case certificates of membership will be issued.

THE DETAILS OF THE EXHIBITION

will more fully appear in the statement below, giving the premiums offered, the conditions affixed, the entries, and the premiums awarded.

[NOTE—The names of persons to whom premiums were awarded are given first under each specification, with the amount awarded, and afterwards the names of other competitors for the same. When the name of a person is repeated the place of residence is omitted.]

CLASS 1. — *Apples.*

FIRST DIVISION.

Conditions—Entries for all premiums in this division must consist of five specimens of each variety exhibited, and (except Nos. 19 and 20) of at least twenty named varieties. Entries for premiums Nos. 1, 19 and 20 must be separate and distinct collections, not embracing any other collection or specimens.

Collections entered for premiums Nos. 2 to 17, may also be entered for No. 18, but in any such case only one premium will be awarded for one collection."

No. 1. For the best general collection of apples grown exclusively within the limits of either county in this State, but not necessarily grown by the exhibitor.

S. R. Sweetzer, Cumberland Centre, (Cumberland County) first premium, \$20; W. S. Place, Charleston, and John L. Leighton, Dexter, (Penobscot County,) second premium, \$15; Daniel Ayer, No. Vassalboro', (Kennebec County), third premium, \$10.

2. For the best general exhibition of apples, grown by the exhibitor, in Androscoggin County, Francis Cary, Turner, \$10.

3. For the same in Aroostook County. (No entry.)

4. For the same in Cumberland County. Henry M. Chase, No. Yarmouth, \$10.00; Milton Dyer, Cape Elizabeth.

5. For the same in Franklin County. (No entry.)

6. For the same in Hancock County. (No entry.)

7. For the same in Kennebec County. Robert H. Gardiner, Gardiner, \$10; Alfred Smith, Monmouth; Joseph Taylor, Belgrade.

8. For the same in Knox County. (No entry.)

9. For the same in Lincoln County. Henry Ingalls, Wiscasset, \$10.

10. For the same in Oxford County. (No entry.)

11. For the same in Penobscot County. S. C. Harlow, Bangor. (Premium not awarded because the same collection took the first premium under No. 18.)

12. For the same in Piscataquis County. (No entry.)

13. For the same in Sagadahoc County. (Not entry.)

14. For the same in Somerset County. James S. Hoxie, Fairfield, \$10; Frank E. Nowell, Fairfield.

15. For the same in Waldo County. Mrs. A. B. Stratford, Monroe; J. W. Lang, Brooks. (Did not conform to the rules.)

16. For the same in Washington County. (No entry.)

17. For the same in York County. John Hanscom, Biddeford, \$10.

18. For the best general exhibition of apples. S. C. Harlow, \$20; Joseph Taylor, \$15; Alfred Smith, \$10; Henry M. Chase, \$5; Henry Ingalls; Francis Cary, Turner; Robert H. Gardiner, John Hanscom, James S. Hoxie, Milton Dyer, Mrs. A. B. Strattard, J. W. Lang.

19. For the best five named varieties of fall apples. Geo. B. Sawyer, Wiscasset, \$5; J. Pope and Son, Manchester, \$3; S. C. Harlow, \$2; Alfred Smith, Joseph Taylor, Robert H. Gardiner.

20. For the best five named varieties of winter apples. J. Pope & Son, \$5; Alfred Smith, 3; Milton Dyer, 2; Joseph Taylor, Henry Ingalls, Geo. B. Sawyer, Robert H. Gardiner, S. C. Harlow.

SECOND DIVISION.

"Entries for premiums in this division must consist of *ten* specimens of each variety exhibited, and must be separate specimens from any exhibited in the first division."

21. For the best single variety of autumn apples. G. B. Sawyer, \$3, (Porter); C. H. Bradford, Turner, \$2, (Gloria Mundi); Alfred Smith, (Porter); Joseph Taylor, (Judy); J. Pope & Son, (Pomme Royal).

22. For the best single variety of winter apples. S. C. Harlow, \$3, (R. I. Greening); R. H. Gardiner, \$2, (Yel-

low Bellflower); Alfred Smith, (Roxbury Russet); Joseph Taylor, (Northern Spy); Arnold Greenleaf, Wiscasset, (Northern Spy); W. S. Place, (Rofe).

23. For the best dish of American Golden Russets. Henry Ingalls, \$2; G. B. Sawyer, \$1; Daniel Ayer.

24. Baldwins. Pulsifer Bros., East Poland, \$2; Joseph Smiley, Vassalboro', \$1; Alfred Smith, Joseph Taylor, G. B. Sawyer, Henry M. Chase; E. K. Whitney, Harrison; John Hanscom, Arthur H. Taber, Daniel Ayer; Z. A. Gilbert, East Turner; Milton Dyer, Henry Ingalls, J. Pope & Son, S. R. Sweetzer; J. Colby Dudley, Readfield.

25. Black Oxfords. Pulsifer Bros., \$2; Z. A. Gilbert, \$1; Henry M. Chase.

26. Dean. John L. Leighton, \$2; J. Pope & Son, \$1.

27. Duchess of Oldenburgh. Henry Tilley, Castle Hill, \$2; S. R. Sweetzer, \$1; S. C. Harlow.

28. Early Harvest. Pulsifer Bros., \$1.

29. Fall Harvey. John L. Leighton, \$2; Alfred Smith, \$1.

30. Fameuse. Edward H. Cook, Vassalboro', \$2; Arnold Greenleaf, \$1; Alfred Smith, G. B. Sawyer, Henry Tilley.

31. Gravenstein. E. K. Whitney, \$2; S. C. Harlow, \$1; Alfred Smith, Henry Ingalls.

32. Hubbardston Nonsuch. Pulsifer Bros., \$2; Alfred Smith, \$1; Joseph Taylor, Arnold Greenleaf, Henry M. Chase, R. H. Gardiner, J. Colby Dudley, Arthur H. Taber; Calvin Spaulding, Hallowell; Z. A. Gilbert.

33. Hurlbut. Edward H. Cook, \$2; Arthur H. Taber, \$1; Daniel Ayer.

34. Jewett's Fine Red. Pulsifer Bros., \$2. Alfred Smith, \$1; Joseph Taylor, Henry M. Chase, Z. A. Gilbert.

35. King of Tompkins County. S. C. Harlow, \$2; Henry Ingalls, \$1; Daniel Ayer.

36. King Sweeting. (Not awarded.) Alfred Smith.

37. Minister. J. Pope & Son, \$2; John L. Leighton, \$1.

38. Mother. Henry Ingalls, \$2; J. Pope & Son, \$1; Henry M. Chase.

39. Northern Spy. Henry Ingalls, \$2; Joseph Taylor, \$1; R. H. Gardiner, John L. Leighton; F. W. Runnels, Clinton; Pulsifer Bros., S. R. Sweetzer, S. C. Harlow; Mrs. F. A. Jones, Waterville.

40. Porter. Alfred Smith, \$2; Henry Ingalls, \$1; Arnold Greenleaf, Francis Cary, Henry M. Chase, E. K. Whitney, Milton Dyer.

41. Primate. (No entry.)

42. Pumpkin Sweet. (Not awarded.) Henry M. Chase, F. W. Runnels.

43. Red Astrachan. (Not awarded.) G. B. Sawyer.

44. Red Canada. Pulsifer Bros., \$2; Alfred Smith.

45. Rhode Island Greening. S. R. Sweetzer, \$2; Joseph Smiley, \$1; Joseph Taylor, G. B. Sawyer, Henry M. Chase, J. Colby Dudley, Daniel Ayer.

46. Roxbury Russet. Pulsifer Bros., 2; Alfred Smith, \$1; Joseph Taylor, J. Colby Dudley, E. K. Whitney, Z. A. Gilbert, S. R. Sweetzer.

47. Sops of Wine. S. C. Harlow, 2; Alfred Smith.

48. Somerset. W. S. Place, \$2.

49. Starkey. Daniel Ayer, \$2; Arthur H. Taber, \$1; Edward H. Cook.

50. Tallman's Sweet. Joseph Smiley, \$2; F. W. Runnels, \$1; F. E. Nowell, Pulsifer Bros.; John Reynolds, Jr., Clinton; Arthur H. Taber, Daniel Ayer, Z. A. Gilbert, J. Pope & Son, S. R. Sweetzer, S. C. Harlow, Mrs. F. A. Jones.

51. Tetofsky. (No entry.)

52. Wagener. Daniel Ayer, \$2; Henry Ingalls, \$1.

53. William's Favorite. S. C. Harlow, \$2.

54. Winthrop Greening. F. E. Nowell, 2; Calvin Spaulding, \$1; Alfred Smith, Geo. B. Sawyer.

55. Yellow Bellflower. R. H. Gardiner, \$2; Arthur H. Taber, \$1; Joseph Taylor, F. W. Runnels, Calvin Spaulding.

56. Seedling Apples. Alfred Smith, Joseph Taylor, Henry M. Chase, John Reynolds, Jr., (two varieties); John Emerson, (two varieties); D. E. Manter, Sidney, (two varieties); Milton Dyer, (two varieties); S. R. Sweetzer.

57. Crab apples. J. A. Varney & Son, No. Vassalboro', \$1; Alfred Smith, G. B. Sawyer, John L. Leighton; Mrs. Peter De Rocher, Waterville; F. E. Nowell, John Emerson, (two varieties); Mrs. Moses Getchell, Winslow; Milton Dyer, S. R. Sweetzer.

58. Collection of crab apples (not less than five varieties.) G. B. Sawyer, \$3; Alfred Smith, John Emerson.

Sundries. The following varieties not named in the premium list were exhibited, viz: By F. W. Runnels, Pound Sweet and Fall Pippin; G. B. Sawyer, Newtown Pippin, American Golden Pippin and Peck's Pleasant; Pulsifer Bros., Gloria Mundi of Androscoggin County, Spitzenburg and Noyes apple; E. K. Whitney, Blue Pearmain, Spitzenburg, Bloomfield and Garden Royal; John Hanscom, Bottle Greening; Z. A. Gilbert, Gilliflower; Henry McLaughlin, Loudon

Pippin, Northern Sweet and Hawley; Ansel T. Mores of Ashland, collection of apples, varieties not named. Mr. S. B. Hobson of Mt. Pleasant, Neb., exhibited specimens of apples grown in 1876 and preserved by patented process. There were some other specimens and collections brought in too late for entry.

CLASS 2.—*Pears.*

Entries for premiums Nos. 59, 60 and 61 were required to consist of *five* specimens of each variety exhibited, and for Nos. 62 to 90, inclusive, of ten specimens of each variety.

59. For the best general exhibition of pears. Samuel Rolfe, Portland, \$15; Henry Ingalls, \$12; Alfred Smith, \$8; Joseph Taylor, \$5; Calvin Spaulding.

60. For the best five named varieties of autumn pears. S. S. Low, Bangor, \$5; Alfred Smith, \$3; Joseph Taylor, G. B. Sawyer, Calvin Spaulding.

61. For the best five named varieties of winter pears. (No entry.)

62. For the best single variety of fall pears. Joseph Taylor, \$3, (Bartlett); Alfred Smith, \$2, (Maria Louise); E. K. Whitney, (Flemish Beauty); Calvin Spaulding, (Goodale).

63. For the best single variety of winter pears. Geo. B. Sawyer, \$3, (Lawrence); Alfred Smith, \$2, (Glout Moreau); Joseph Taylor, (Lawrence).

64. For the best dish of Bartlett pears. Joseph Taylor, \$2; Granville Fernald, Harrison, \$1; Henry Ingalls, S. S. Low.

65. Belle Lucrative. Henry Ingalls, \$2; Alfred Smith, \$1; Henry McLaughlin.

66. Beurre d'Anjou. Henry Ingalls, \$2; Alfred Smith, \$1.

67. Beurre Bosc. (None exhibited.)

68. Beurre Hardy. Henry Ingalls, \$2; Henry McLaughlin, \$1; R. H. Gardiner.

69. Beurre Superfin. Henry Ingalls, \$2; Joseph Taylor.

70. Beurre Clairgeau. Calvin Spaulding, \$2; G. B. Sawyer, \$1; Henry Ingalls.

71. Beurre Diel. Alfred Smith, \$2; S. S. Low, \$1; G. B. Sawyer.

72. Buffum. Alfred Smith, \$2; E. K. Whitney, \$1; Joseph Taylor, R. H. Gardiner, Calvin Spaulding.

73. Clapp's Favorite. S. S. Low.

74. Doyenne Boussock. Henry Ingalls, \$2.

75. Duchess d'Angouleme. Mrs. K. B. Laselle, Waterville, \$2; Samuel H. Dawes, Harrison, \$1; Alfred Smith, Joseph Taylor, G. B. Sawyer, S. S. Low, Henry McLaughlin.

76. Flemish Beauty. John L. Leighton, \$2; S. R. Sweetzer, \$1; Alfred Smith, Joseph Taylor, R. H. Gardiner, S. S. Low, Granville Fernald, Hiram Cornforth, W. Waterville; Henry McLaughlin, S. C. Harlow, Arthur H. Taber.

77. Fulton. E. K. Whitney.

78. Glout Moreceau. Alfred Smith, \$2; Henry McLaughlin, \$1; R. H. Gardiner.

79. Goodale. Calvin Spaulding, \$2; Henry Ingalls, \$1; Joseph Taylor, E. K. Whitney.

80. Howell. (No entry.)

81. Lawrence. G. B. Sawyer, \$2; Joseph Taylor, \$1; E. K. Whitney.

82. Louise Bonne de Jersey. E. K. Whitney, \$2; Henry Ingalls, \$1; Alfred Smith.

83. Maria Louise. Alfred Smith, \$2.

84. Seekel. (No entry.)

85. Sheldon. Joseph Taylor.

86. Swan's Orange. Henry Ingalls, \$2.

87. Urbaniste. Joseph Taylor, \$2.

88. Vicar of Winkfield. Alfred Smith, \$2; J. Colby Dudley.

89. Winter Nelis. Henry McLaughlin, \$2; R. H. Gardiner.

90. Seedling pears. (No entry.)

Gratuity. R. H. Gardiner, Napoleon, .50.

Henry McLaughlin exhibited specimens of Beurre de Brignais, Beurre d'Arenberg and Indian Queen; S. C. Harlow, specimens of pears named Harlow.

The specimens of Flemish Beauty exhibited were especially excellent, and coming from various parts of the State would seem to indicate that this old and favorite variety has taken a new lease of life.

CLASS 3.—*Grapes.*

91. For the best exhibition of foreign grapes, grown with fire heat. (No entry.)

92. For the best exhibition of foreign grapes, grown in cold grapery. Andrew S. Sawyer, Cape Elizabeth, \$10; G. B. Sawyer, \$8; Henry Ingalls, \$5.

93. For the best cluster of Black Hamburg. G. B. Sawyer, \$2; Andrew S. Sawyer, Henry Ingalls; John Burr, Freeport.

94. Wilmot's Hamburg. Andrew S. Sawyer, \$2.
95. Victoria Humburg. Andrew S. Sawyer, \$2.
96. White Frontignan. (No entry.)
97. Grizzly Frontignan. (No entry.)
98. White Muscat. G. B. Sawyer, \$2; S. S. Low.
99. White Chasselas. S. S. Low, \$2; G. B. Sawyer.
100. Lady Downes. (No entry.)
101. Buchland Sweetwater. Henry Ingalls, \$2.
102. Trentham Black. Henry Ingalls, \$2; G. B. Sawyer, Andrew S. Sawyer.
103. West's St. Peters. Andrew S. Sawyer, \$2.
104. White Nice. (No entry.)
105. Red Chasselas. Andrew S. Sawyer, \$2; Henry Ingalls, Geo. B. Sawyer.
106. Chasselas Musque. G. B. Sawyer, \$2.
107. For the best collection of native grapes, (open air). G. B. Sawyer, \$10; J. A. Varney & Son, No. Vassalboro', \$8; Galen Hoxie, North Fairfield, \$5; Peter De Rocher, Waterville, \$3; Alfred Smith, Joseph Taylor, Charles I. Percy, Vassalboro'; J. C. Dudley, Calvin Spaulding, Mrs. A. B. Strattard, S. C. Harlow, Henry Ingalls.
108. For the best single variety, open air, three bunches. (Not awarded.) Joseph Taylor, G. B. Sawyer, Peter De Rocher, J. C. Dudley, Henry McLaughlin, J. A. Varney & Son.
109. For the best three bunches Delaware. Granville Fernald, \$1; Geo. B. Sawyer, Andrew S. Sawyer, Charles I. Perley, Mrs. Peter De Rocher, E. K. Whitney, Alfred Smith, Galen Hoxie, Mrs. K. B. Laselle, Mrs. F. A. Jones, Calvin Spaulding, Henry McLaughlin.
110. Concord. Galen Hoxie, \$1; Joseph Taylor, Geo. B. Sawyer, Andrew S. Sawyer, Mrs. P. De Rocher, J. C. Dudley, Alfred Smith; George Ballentine, Waterville; Calvin Spaulding, J. A. Varney & Son.
111. Hartford Prolific. Galen Hoxie, \$1; Geo. B. Sawyer, Andrew S. Sawyer, Mrs. P. De Rocher, J. C. Dudley, E. K. Whitney, Alfred Smith; J. M. Taylor, Vassalboro'; Mrs. F. A. Jones, Waterville; Calvin Spaulding, J. A. Varney & Son.
112. Rebecca. E. K. Whitney, \$1; Andrew S. Sawyer.
113. Allen's Hybrid. Henry McLaughlin, \$1; G. B. Sawyer, J. C. Dudley, Alfred Smith.
114. Adirondack. J. A. Varney & Son, \$1; Alfred Smith.
115. Black Hawk. J. A. Varney & Son, \$1.
116. Creveling. Alfred Smith, \$1; Charles I. Perley, Calvin Spaulding.
117. Massasoit. (No entry.)

118. Wilder. Geo. B. Sawyer, \$1; Calvin Spaulding.
 119. Lindley. G. B. Sawyer, \$1.
 120. Agawam. G. B. Sawyer, \$1; Henry Ingalls, Charles I. Perley, E. K. Whitney, C. Spaulding.
 121. Merrimac. Granville Fernald, \$1; G. B. Sawyer, Calvin Spaulding.
 122. Salem. Granville Fernald, \$1; G. B. Sawyer, Mrs. Peter De Rocher, J. A. Varney & Son.
 123. Worden's Seedling. (No entry.)
 Henry Ingalls exhibited specimens of Cornucopia and Israella; G. B. Sawyer, Iona and Diana, grown under glass; A. S. Sawyer, Frankenthal and Iona; Charles I. Perley, Northern Muscadine and Isabella; J. C. Dudley, a seedling of Concord, Ives' Seedling and Dracut Amber; Granville Fernald, Blood's Seedling and Perkins; Galen Hoxie, Northern Muscadine; James Drummond, Waterville, Union Village; George Ballentine, Northern Muscadine; H. McLaughlin, Israella; J. A. Varney & Son, Rogers' No. 5, Diana, Isabella, Martha and Eumelan; J. M. Cobb, Yarmouth, Champion; and there were several varieties not named.

CLASS 4—*Plums and Miscellaneous Articles.*

124. For the best general exhibition of plums, not less than six varieties. (No entry.)
 125. For the best dish of plums of a single variety. (Premiums not awarded.) Joseph Taylor, gratuity, \$1.
 126–145 inclusive. For single varieties of plums, peaches, apricots and nectarines. (No entries.)
 146. For the best dish of quinces. E. K. Whitney, \$2; Hiram Cornforth.
 147. Ornamental dish of fruit. Mrs. George B. Sawyer, \$3; S. C. Harlow, \$2; Joseph Taylor.
 148. For the best peck of cultivated cranberries. E. K. Whitney, \$3; Mrs. A. B. Strattard.
 149–151 inclusive. For orange, lemon and fig trees, in fruit. No entries.
 152. For the best exhibition of canned fruit, not less than five varieties, of domestic manufacture. Mrs. E. B. Merrill, Vassalboro', \$3; Mrs. Daniel Ayer, North Vassalboro', \$2; Mrs. P. DeRocher, Joseph Taylor.
 153. For the best exhibition of fruit jellies, not less than five varieties, of domestic manufacture. Mrs. H. P. Pearson, Vassalboro', \$2.

154. For the best exhibition of pickles, domestic manufacture. Mrs. P. DeRocher, \$2; Mrs. W. E. Drummond, Winslow.

155. For the best exhibition of terra cotta ware made in this State. Portland Stone Ware Company, \$10.

156. For the best exhibition of ornamental earthen ware (vases, flower pots, &c.,) made in this State. Portland Stone Ware Company, \$5.

157. For the best oil painting of fruits or flowers. R. Sanderson, Waterville, \$2.

158. For the best drawing or other picture of same. (No entry.)

Special Premium. For the best collection of stuffed birds, native of Maine. Albert M. Varney, No. Vassalboro', \$5.

SUNDRIES.

Ward's Fertilizer Company, Boston, sample of "Insecticide"; B. Blair, Waterville, pair of antique chandeliers; Sampson & Pike, Norway, patent reversible flower-pot stand—an article claimed to be simple, durable and ornamental, and which was awarded a "complimentary mention" by the committee. Miss Caroline Matthews, Waterville, charcoal sketches, gratuity, \$1; also a sketch in oil color, gratuity, \$1. Miss Louise Ingalls, Waterville, charcoal sketch; Miss M. Varney, No. Vassalboro', ornamental Albert ware; Miss Mary Matthews, Waterville, landscape in oil; Mrs. W. E. Drummond, Winslow, canned fruits and jellies; E. K. Whitney, Harrison, barberries; T. T. Martin, Waterville, specimens of penmanship; F. E. Nowell, tree pruner; Mrs. Charlotte Jones, Winslow, mineral water. Frank Bowman & Bro., No. Sidney, apple trees from nursery, gratuity, \$2.

EXHIBITORS' STATEMENTS ON CRANBERRY CULTURE.

I. BY E. K. WHITNEY, HARRISON.

"The cranberries which I offer for exhibition were grown on common swamp muck. The meadow was prepared, by removing about two feet of the top soil, which was used as compost with animal manures. The vines were set about three feet apart each way on the soil or muck thus prepared. A dam was constructed by which the vines are kept covered with water, from about the first of November to the twentieth of May. They have received no other care as yet, although I think some further attention will be required in the future to prevent the various grasses and

weeds from intruding too much upon the premises. I consider the flowing very important to prevent the frost from throwing the vines out, also to prevent the worms from destroying the vines and fruit."

II. BY MRS. A. B. STRATTARD, MONROE.

"My cranberries were raised upon a piece of ground that is composed mostly of a clay marl with but little muck. In preparing the ground the top or scurf merely was taken off, and the vines planted out immediately. The ground would be called high, as there are no means of flowing it. It is not wet at all during the summer, unless it is a very wet season, although water grasses and moss grow upon it. On three sides of the ground we have a ditch from three to four feet deep, which is hardly ever dry, although it has been dry this summer; yet the land is not what would be called dry, as it gets well soaked in the spring and fall. We never have had any trouble from worms or other insects."

CLASS 5—*Flowers.*

"In this class no article can be entered for more than one premium. Flowers entered for Special Premiums cannot be entered for the Society's Premiums.

All plants and flowers must be in position in the hall at 9 o'clock in the morning of the second day, to enable the Awarding Committees to make their examinations and reports immediately after that time."

FIRST DIVISION.

159. For the best display of cut flowers, filling not less than 100 phials. J. A. Varney & Son, \$10; Mrs. A. B. Stratford, \$8; Mrs. Peter De Rocher, \$5; J. W. Britton, Winslow; Miss Addie Perkins, Fairfield.

160. For the best exhibition of Roses, not less than five varieties. Mrs. Peter De Rocher, \$3; James Vickery, Portland, \$2; J. A. Varney & Son.

161. For the best exhibition of Dahlias, not less than ten varieties. J. A. Varney & Son, \$3; Mrs. Charles Stanley, Winthrop, \$2.

162. For the best exhibition of Pinks, (1st premium not awarded.) Mrs. H. G. Abbott, Vassalboro', \$1; Mrs. Charles Stanley, James Vickery.

163. For the best exhibition of Japan Lilies. (No entry.)

164. For the best exhibition of Asters, not less than ten varieties. Mrs. C. Stanley, \$2; Mrs. A. B. Stratford, \$1.

165. For the best exhibition of Pansies. J. A. Varney & Son, \$2; Mrs. C. Stanley, \$1; Addie Perkins, James Vickery.

166. Zinnias. (Not awarded.) Mrs. C. Stanley, J. W. Britton, J. A. Varney & Son.

167. Phlox Drummondii. Mrs. H. P. Pearson, Vassalboro', \$2; I. W. Britton, \$1; Mrs. C. Stanley, Mrs. P. De Rocher, Addie Perkins, Mrs. K. B. Lasselle, James Vickery, Mrs. A. B. Strattard.

168. Stocks. Mrs. Moses Getchell, \$2; Mrs. Peter De Rocher, \$1; Mrs. C. Stanley, Mrs. A. B. Strattard.

169. Balsams. (Not awarded.) Mrs. C. Stanley, Mrs. A. B. Strattard.

170. Chrysanthemums. (No entry.)

171. Petunias. Mrs. H. G. Abbott, \$2; Mrs. C. Stanley, Addie Perkins, Mrs. A. B. Strattard.

172. Gladiolus. Mrs. H. G. Abbott, \$2; Mrs. A. B. Strattard.

173. Tuberoses. (No entry.)

174. Verbenas. I. W. Britton, \$3; J. A. Varney & Son, \$2; Mrs. C. Stanley, Mrs. P. DeRocher, Addie Perkins, James Vickery, Mrs. A. B. Strattard, Miss L. M. Pope.

SECOND DIVISION.

175. For the best pair of parlor bouquets. James Vickery, \$3; Mrs. P. De Rocher.

176. For the best pair of wall bouquets. (Not awarded.) Addie Perkins, gratuity, \$1; Mrs. P. De Rocher.

177. For the best pair of hand bouquets. James Vickery, \$2.

178. For the best single bouquet. Mrs. A. B. Strattard, \$1; Charles I. Perley.

179. For the best bouquet of Asters. Mrs. A. B. Strattard, \$1; Mrs. C. Stanley, Mrs. Peter De Rocher.

180. For the best bouquet of Dahlias. (Not awarded.)

181. For the best floral design. Miss L. M. Pope, \$8; Mrs. Moses Getchell, \$5; James Vickery, \$3; Mrs. Charles Stanley.

182. For the best floral wreath. James Vickery, \$2; Mrs. C. Stanley, gratuity, \$1; Mrs. P. De Rocher.

183. For the best floral dinner table decoration. Mrs. A. B. Strattard, \$1; Mrs. C. Stanley, Mrs. P. De Rocher, Mrs. H. P. Pearson, Miss L. M. Pope.

184. For the best basket of wild flowers. (Not awarded.) Mrs. C. Stanley; Etta Nowell, Fairfield; Mrs. H. P. Pearson; Miss Edith Sawyer, Wiscasset.

185. For the best exhibition of dried grasses. Mrs. C. Stanley, \$1; Mrs. Moses Getchell, Joseph Taylor; Mrs. A. B. Stratford; Mrs. T. D. Merrill, Sidney.

186. For the best exhibition of everlasting flowers. (Not awarded.) Mrs. C. Stanley, Mrs. H. P. Pearson, Mrs. K. B. Lasselle, Mrs. A. B. Stratford.

THIRD DIVISION.

187. For the best exhibition of green house plants. James Vickery, \$10; J. A. Varney & Son, \$8.

188. For the best exhibition of Ferns. J. A. Varney & Son, \$3; James Vickery, \$2; Frank E. Nowell, Joseph Taylor; D. C. Perkins, Fairfield.

189. For the best exhibition of Geraniums. J. A. Varney & Son, \$3; Mrs. H. G. Abbott, \$2; James Vickery.

190. For the best exhibition of Begonias. J. A. Varney & Son, \$3; James Vickery, \$2.

191. For the best exhibition of pot plants. (No entry.)

192. For the best single pot plant. Mrs. Peter De Rocher, \$2; Miss L. M. Pope, \$1; Mrs. H. P. Pearson, Addie Perkins; Mrs. W. Roberts, Waterville; James Vickery, Miss L. M. Pope, (two entries).

193. For the best hanging basket, James Vickery, \$3; J. A. Varney & Son, \$2; J. Vickery, \$1; Etta Nowell, Fairfield.

194. For the best Wardian case. (No entry.)

195. For the best Aquarium, with plants. (No entry.)

196. For the best rustic stand, not less than three feet in height, to be filled with choice plants. James Vickery, \$3.

197. For the best rustic work, (home made) Joseph Taylor, \$2.

Special Premiums offered by James Vick, Seedsman and Florist, Rochester, N. Y., to amateurs only.

[Awarding Committee—James Vickery, Portland, and Mrs. Moses Getchell, Winslow.]

For the best collection of cut flowers. Mrs. Charles Stanley, \$20; Mrs. G. B. Sawyer, \$10; Miss Addie Perkins, \$5.

For the best floral ornamental work, Miss L. M. Pope, \$5; Mrs. C. Stanley.

CLASS 6—*Garden Crops and Vegetables.*

198. For the best exhibition and greatest variety of vegetables. Peter DeRocher, \$8; W. H. Pearson, Vassalboro', \$5; R. H. Gardiner, \$3; Weymouth Jones; A. H. Ellis, Fairfield Corner; S. R. Sweetzer.

199. For the best exhibition and greatest variety of potatoes, not less than five varieties, one peck of each variety. • S. R. Sweetzer, \$5; Z. A. Gilbert, \$3; R. H. Gardiner; J. W. Lang, Milton Dyer.

200. For the best single variety of potatoes, one peck. W. H. Pearson, \$1; Herbert E. Nye, Fairfield Corner, gratuity, 50 cents; Z. A. Gilbert, (two varieties); R. H. Gardiner, Weymouth Jones, (three varieties); Peter DeRocher, W. E. Drummond. S. R. Sweetzer.

201. For the best seed corn, not less than 20 ears, in trace. Galen Hoxie, \$2; Alfred Smith, \$1; R. H. Gardiner, J. W. Lang, W. H. Pearson, (two varieties); John Emerson, A. H. Ellis.

202. For the best sweet corn, 12 ears. John Mathews, Waterville, \$2; Alfred Smith, Herbert E. Nye, Weymouth Jones, Peter De Rocher, W. H. Pearson, Milton Dyer, Mrs. A. B. Strattard.

203. For the best 10 blood beets. Mrs. A. B. Strattard, \$1; Alfred Smith, Herbert E. Nye, Weymouth Jones, Peter De Rocher, Frank E. Nowell, W. H. Pearson, James S. Hoxie, A. H. Ellis.

204. For the best 10 turnip beets. Milton Dyer, \$2; J. W. Lang, \$1; Alfred Smith, R. H. Gardiner, Weymouth Jones, (two varieties); Peter De Rocher, W. H. Pearson, A. H. Ellis, Mrs. A. B. Strattard, S. R. Sweetzer.

205. For the best cabbages, 6 heads. Mrs. A. B. Strattard, \$1; R. H. Gardiner, Peter De Rocher.

206. For the best cauliflowers, 6 heads. (No entry.)

207. For the best carrots, 10 specimens. Herbert E. Nye, \$2; Milton Dyer, \$1; R. H. Gardiner, Peter DeRocher.

208. For the best parsnips, 10 specimens. Milton Dyer, \$2; Alfred Smith, Peter De Rocher, W. H. Pearson.

209. For the best ruta bagas, 10 specimens. Mrs. A. B. Strattard, \$2; Milton Dyer, \$1; Alfred Smith, Weymouth Jones, Peter De Rocher, F. E. Nowell, James S. Hoxie, A. H. Ellis.

210. For the best English or strap leaf turnips, 10 specimens. J. W. Lang, \$1; Alfred Smith, John Mathews, Mrs. A. B. Strattard.

211. For the best celery, 6 roots. (Not awarded.) Peter De Rocher.

212. For the best peppers. (Not awarded.) E. B. Merrill.

213. For the best onions, half bushel. (Not awarded.) Herbert E. Nye, Peter De Rocher, W. H. Pearson.

214. For the best tomatoes, 25 specimens. S. R. Sweetzer, \$2; Mrs. K. B. Lasselle, \$1; Weymouth Jones, Peter DeRocher, F. E. Nowell, (two varieties); W. H. Pearson, Mrs. A. B. Strattard.

215. For the best marrow squash, 3 specimens. (Not awarded.) Peter De Rocher, W. H. Pearson; Henry Smith, Waterville; J. H. Smith, Waterville.

216. For the best Hubbard squash, 3 specimens. Herbert E. Nye, \$2; John Lasselle, \$1; Peter De Rocher.

217. For the best Butman squash. (Not awarded.) R. H. Gardiner.

218. For the best turban squash. Herbert E. Nye, \$2; Weymouth Jones, \$1; Peter DeRocher, Mrs. A. B. Strattard.

219. For the best Marblehead squash. A. H. Ellis, \$2; Herbert E. Nye, \$1; Peter De Rocher, W. H. Pearson.

220. For the largest squash. Herbert E. Nye, \$1; Peter De Rocher, W. H. Pearson.

221. For the best pumpkins. John Mathews, \$1; R. H. Gardiner, Herbert E. Nye, W. H. Pearson, Hiram Cornforth, Daniel Ayer, W. Jones.

222. For the largest pumpkin. (Not awarded.) W. H. Pearson.

223. For the best musk melons, 3 specimens. (Not awarded.) Peter De Rocher, F. E. Nowell.

224. For the best water melons, 3 specimens. James S. Hoxie, \$1; Weymouth Jones, Peter De Rocher, A. H. Ellis, Milton Dyer.

225. For the best citron melons, 3 specimens. Weymouth Jones, \$1; F. E. Nowell, Peter De Rocher, James S. Hoxie.

Gratuities. Weymouth Jones for mangel wurzels, 50 cts.; Alfred Smith, Yokohama squash, 50 cents; F. E. Nowell, mangel wurzels, 50 cents.

R. H. Gardiner, Esq., exhibited excelsior oats, worthy of honorable mention; Weymouth Jones, Geo. Merrill and W. H. Pearson, popping corn; Harry Blanchard, egg gourds.

THE ANNUAL MEETING OF THE SOCIETY

was held on Thursday, the third day of the exhibition, at four o'clock P. M., and was well attended. Officers were elected for the ensuing year, a list of whom will be found in another part of this report.

Voted, to dispense with the election of a Corresponding Secretary.

Voted, that the reports of the Treasurer and Executive Committee be presented at the Winter Meeting.

Voted, that the thanks of the Society be and hereby are tendered to the town officers and citizens of Waterville, for the use of the Town Hall and for other facilities afforded by them for holding the annual exhibition; also to the several railroad companies of the State for return tickets, and to the Eastern Express Company for liberal concessions granted to the Society.

Voted, that the time and place of holding the Winter Meeting be referred to the President.

Adjourned to meet at the office of the Secretary, in Wassaset, on the 26th day of December next, (to be thence adjourned to the time and place appointed for the Winter Meeting.)

PROCEEDINGS OF THE WINTER MEETING.

The fifth annual Winter Meeting of the Society was held at the Town Hall in Winthrop, February 27th and 28th and March 1st, 1878, by adjournment from time to time, of the annual meeting, and in accordance with notice duly issued.

The order of exercises, as announced, was substantially carried out, although some topics of minor importance were withheld for want of time, and some others by the absence of the persons to whom they had been assigned.

The sessions were well attended and a good degree of interest manifested in the proceedings. As usual at the Winter Meetings of the Society, there was an exhibition of winter fruit and a few cut flowers, &c. The Diploma awarded to the Society by the Centennial Commission was placed on exhibition in the hall.

FIRST DAY—EVENING SESSION.

The Society assembled at the time appointed, and was called to order by the President, who briefly stated the purposes of the meeting, and invited all present to participate in the exercises.

Mr. B. C. TORSEY of Winthrop, welcomed the Society in behalf of the citizens, in an elaborate address, alluding at length to the early history of the town and its agricultural organizations, its advanced position in all moral and intellectual movements, its material prosperity, and particularly to its extensive and successful efforts in fruit culture. Mr. Torsey's address was listened to with close attention, and was briefly replied to in behalf of the Society by the President and Secretary.

PRESIDENT GILBERT then addressed the meeting, reviewing the history of the Society, stating the purposes of the Society and the measures which had been adopted from year to year since its organization to promote the interests of fruit culture in the State. He also spoke of the advantages of meetings of this character, and the mutual benefits to be derived from them.

The President then presented a paper contributed by Dr. N. T. True of Bethel, who was not present, "on planting an orchard," being a sequel to the valuable paper read by him last year on the same subject.

PLANTING AN ORCHARD.

BY N. T. TRUE, M. D., BETHEL.

In the spring of 1877, I set out a young orchard of apple trees. I planted it for posterity. All the pleasure I anticipate from it is that which may arise from seeing the trees grow from year to year, and the care I may bestow upon them. Several points in my present and past experience seem to me worthy of note, which I will record, with the hope that now and then a hint may be received by others worthy of their commendation. I shall, therefore, describe my labor in this direction quite minutely.

PREPARATION OF THE SOIL.

Three years ago, I selected a little more than two acres of land in my field for an orchard. The soil was full of large and small boulders, the most of which I removed the first and second years, by digging, blasting, or sinking. Broke up the land in autumn, as deep as I could, and planted with corn and potatoes the following spring. The former was hoed three times, the latter twice. Plowed again in autumn, and dug boulders. This was repeated for two years. By plowing late in autumn, I have subdued the witchgrass on one acre, simply by keeping the ground under clean cultivation where I raised corn, and tilting out the grass with a five-pronged

fork, or potato digger, after the crop was removed. I cleared an acre in one day, though a portion of it had not been badly infested.

Last April I cross plowed, and followed it with the cultivator and harrow, till the ground was as mellow as I could make it, and dug the holes twenty-five feet apart, none being less than ten or twelve feet from fences between me and my neighbors. I threw out the soil as deep as the land had been cultivated, each hole occupying a little more than a square yard. I then took a long pick and loosened the hard subsoil as deep as I could all over the bottom of each hole. A half bushel, more or less, of stable manure, was thrown into each hole, and carefully chopped into the loosened subsoil with a hoe. This last operation I deem of the greatest importance. It prepares an excellent bed for the roots of the tree, which will be sure to penetrate it, besides preventing the drying up of the soil during a drought, by which so many trees are killed. Could I have had my time at command, I would rather have dug the holes in autumn. Planted with corn and potatoes as before.

TRANSPLANTING THE TREES.

I selected a rainy day, took the cars and visited the nursery of John S. Holmes, Esq., who resides a mile and a quarter from Oxford G. T. R. Station. His nursery is nine years old from the seed. The trees are of a slow, but healthy growth. On cutting through the wood it looked white, like white oak, a good sign of a healthy growth.

With the aid of three men, I selected and dug one hundred and sixty trees, cut squarely off the second and third stories where necessary, but carefully avoided cutting off any lower twigs or branches, unless very near the ground. The object of this course was, to save the stock in case of failure in grafting. I packed them in bunches of ten each, and immediately sent them, by previous arrangement, on the cars to Bethel, and at once transferred them to my orchard. The roots were kept wet till they were planted, by covering them with wet

straw. Many trees are destroyed every year by having their roots dried so much that they do not leave out till July, or even August, as I have had another lot from another nursery do the past year. Their vitality is destroyed, and the most of them are worthless.

SETTING OUT THE TREES.

While setting out the trees four men were employed, to each of whom was assigned a special duty. One assorted the trees and distributed them; another shaped the hole; another held the tree, while the fourth arranged the roots, carefully filling the earth under the trunks and roots, so the tree would stand erect without any soil over the roots. Some soil was next thrown over the roots, followed by a little manure and soil, the whole being carefully pressed down. By this division of labor, a large number of trees may be carefully planted in a single day, while in no case was any manure placed in immediate contact with the roots.

Previous to setting the trees, with a sharp axe I cut off, on a block, with a slanting stroke, all tap-roots and any other roots that had been bruised. I was also careful to turn the side of the tree to the north from which any large branch had been cut close to the stock. Unless this is done, it will be much exposed to the sunscald. I leaned the stocks *very slightly* to the south for the same reason. Not a few trees are killed by the dreaded sunscald simply by leaning to the northeast. A few trees which after all these precautions are thus exposed, I protect by loosely winding around the trunk some old rags.

The next step was to drive down two cedar stakes, to one or both of which the tree was fastened by spun-yarn. Many young trees are killed by being racked back and forth with the wind.

After the trees had all been set, I clipped the extremities of the long branches, and then carefully covered every wound and bruise with soft grafting wax. No twig was too small to be passed over, and I went over the orchard several times

for this purpose during the summer. I have seen no instance of bleeding, or a blackened surface. Even old wounds from previous trimming were kindly remembered. I planted the ground again with corn and potatoes, and kept them under as clean cultivation as possible. During the last of June I mulched the trees, which were set on the driest part of the orchard. For this purpose I used green brakes gathered from the pastures.

THE RESULTS.

The trees put out vigorously, much as if they had never been transplanted, and shoots from four to twelve inches in length were not uncommon by the middle of July. The plant lice attacked them at this time to such a degree as utterly to stop their growth. I tried the experiment of affectionately pressing the twigs covered with the lice between my thumb and forefinger, but with no manifest advantage. By the last of July they all disappeared, and the unusually wet weather of August caused the shoots to start again, so that now, a stranger would declare that there are two years of growth where really there is but one. A perfect joint is formed between the growth of the early and latter part of the season. In one instance I measured a growth of thirty-two inches during the season, while a changed aspect was manifest in the tops of a large majority of the trees. Every week, or oftener, with knife and grafting wax, I pruned every dead or useless twig, and covered every wound with wax, and pressed the wax previously put on closer to the wound, and watched the hatching out of caterpillars, and killed them.

The next step was to guard against the mice and borers. For this purpose I found a pile of empty tomato cans, which I threw into a fire to unsolder them. Taking the body of one of these cans, I rolled it somewhat spirally around the trunk of the tree and then slipped it to the ground, and next to the fence, where the trees are more exposed to the mice, I wound another still more spirally above the first coil. A

very little practice will enable one to do this successfully. Borers do not like to descend inside of the coil to deposit their eggs, while by slipping up the coil their presence can easily be detected. I have not yet gone over the whole orchard, and regard it rather as an experiment, with the hope that it may, at least, partially succeed in warding off these much to be dreaded enemies.

SUBSEQUENT TREATMENT.

During the autumn I turned two back furrows against each tree in one-half of the orchard so as to form a square in which the tree stood. The furrow left was just outside the original hole. I threw out the soil from the bottom of the furrow on the four sides of the square, picked up the subsoil and chopped in manure, and also put a little manure above it and covered it. This with the previous manure will give a "*square meal*" for the tree every day for two or three years, and avoid what should always be guarded against—a check in the growth of the tree. The coming spring I propose to graft the largest stocks and follow it up from year to year as fast as they are of suitable size for the purpose.

REFLECTIONS AND SUGGESTIONS.

Many persons look upon such a course as I have pursued as one involving much labor, but the planting of trees in the way I have described can be rapidly done, and well done, by taking hold of it in a resolute manner. I see nothing in my course that I could have well omitted, and I now see no reason why every one of my one hundred and sixty trees may not live and thrive. If they do, it will be the result of painstaking.

Some persons would object to setting out seedling stocks so old as mine. It should be stated that Mr. Robinson took good care of his trees by keeping them carefully trimmed. Too many seedling nurseries are ruined from neglect to trim them from year to year. My past experience has been in

favor of setting out trees from seven to ten years old, provided they have been properly cared for in the nursery, and receive the same attention in subsequent years. It is the steady and healthy growth rather than the age and size of a tree that should be taken into the account in transplanting a tree. Extremes, however, should be avoided. It should be remarked that the last season was one of the most favorable on record for planting trees.

Some persons prefer grafting the trees when transplanted. My limited experience in this has not been so successful, and I prefer to wait till the trees are well rooted, and the stocks are an inch or so in diameter, and graft them at least three feet from the ground.

A friend of mine, who is a blacksmith, informs me that he makes a little hill of cinders from his shop around each tree to keep off the mice. He has found their nests in the spring close up to the hillock without their finding the tree.

As it has been suggested by a successful pomologist and member of this society, Mr. A. Smith of Monmouth, there is a rage to set out very large orchards. I have something over three hundred trees, and I am certain that I can spend all of my time during the year in looking after that number. As he suggests, the farmer who has forty trees, will find enough to do to care for them, as Mr. Smith cares for his, in connection with his other farming labors.

I propose to keep the land of my new orchard under cultivation for a series of years. It is of doubtful advantage to have a tree come into bearing very early. It is apt to be the sign of dwarfishness, or of premature death. It is better to wait patiently, but keep the trees in a vigorously growing condition until they are capable of producing half a bushel, more or less, of apples in a single crop. One of the best young orchards I have seen in the State is that of Daniel B. Grover, Esq., of West Bethel. The trees were grafted into seedling stocks nine years ago, and the ground has been cultivated with hops nearly all the time since. They are large, sleek looking, and just beginning to bear. The ground is

kept entirely clear of weeds, while the borers receive no welcome. No mulching was used, so that borers could be detected at once, while the hop poles protected the trees from sunscald.

While cultivating among my own trees, I use a short whiffletree, taken from my mowing machine. If the direction of the cultivation is east and west, and north and south, set your two stakes on the northwest and southeast sides of the tree, and there will be but little danger of injuring them.

It is no trifling task to raise an orchard of one acre and have every tree in a healthy condition. There is a constant warfare against drought, winter killing, caterpillars, snow, sunscald, accidents, blight, borers, aphides and starvation, to say nothing of failures in grafting, and trees that refuse to bear. A man must make up his mind for all these contingencies.

Some localities may be exempt from these obstacles, but they are exceedingly rare; and a fainthearted man should never plant an orchard. It requires about as much courage to tear up a black-hearted young tree, or one surrounded with sprouts, as to have a decayed tooth extracted that does not ache.

It is a too common mistake, in writing on the subject of pomology, to endeavor to establish modes of practice that will apply to all locations. Nothing is so unsafe. Difference of soil, and location, the adaptation of special kinds of trees to special localities, which can be learned only from long experience, the deficiencies of particular elements in certain soils, and other modifications, are everywhere met. The good judgment of the pomologist must be above the opinions of the writer and theorist; and he must reject, or accept opinions as in that higher judgment he may think best. There are and should be no patents in pomology. It is with this spirit that I modestly have described my own course in planting an orchard.

Mr. W. P. ATIERTON of Hallowell. I have been much interested in the paper by Dr. True which has just been read, and I think he is right in his ideas. I would like to know if there will be an opportunity for any discussion on the paper we have just listened to?

Mr. SAWYER of Wiscasset. It seems to me that there are some points in the paper of Dr. True's which should receive attention sometime during the meeting. I think the paper is in itself very complete, but perhaps there may be different views on the subject, and that it would be well at some time to call it up for discussion.

The paper was laid on the table, and the meeting adjourned to Thursday morning at nine o'clock.

SECOND DAY—MORNING SESSION.

The business meeting of the Society was adjourned till five o'clock P. M.

At the opening of the public session the President announced the order of exercises for the day, and said :

We have a few minutes before the advertised time of beginning the meeting, and since a goodly number of persons are present, we may as well fill up the time with the consideration of some topic. There are some points in the paper presented last evening which it may be well to consider for the information of those present. I will allude to one or two of these points, and ask for remarks upon them. One point which he dwelt upon quite forcibly, was the importance of thorough work in planting trees, as you will recollect, claiming that by giving them careful attention you would in the end be compensated for the extra expense. It is a good point, and one which may be referred to more at length. Another is the question of planting grafted or seedling trees. According to the experience of individuals present, which are the more desirable, seedlings or trees grafted in the nursery? Secondly, provided seedlings are planted, at what time is it desirable to graft them, and what method would you advocate,

cutting the branches and grafting, or cutting the whole stock? Third, the question of sunscald, which he refers to. What is your experience in regard to that, and the recommendation of leaning the trees slightly to the south, in order to avoid this difficulty? Is there anything in that? Then, perhaps, there is a question it might not be necessary to bring up—ought we to caution any one in regard to forcing trees in this State? Do we need to give any warning in that direction? We have a severe climate, and if the growth is forced and there is no opportunity for that growth to mature, there is danger at times of winter killing.

Mr. BERRY of Winthrop, spoke of the proper distance apart for planting apple trees, and thought thirty or thirty-two feet better than twenty-five, giving a better opportunity for cultivation. An orchard should be thoroughly taken care of to make it profitable.

Mr. POPE of Manchester. I would inquire if any one present has had experience with sunscald? Dr. True speaks in his paper of the bark cracking and turning black, and trees dying from these causes.

Mr. BERRY. I have had some experience. The trouble is greatest with trees leaning towards the northeast. I would advise putting up boards for the protection of those trees which are affected.

Mr. POPE. We are troubled much with prevailing west winds killing our trees.

QUESTION. And so you lean your trees southwest?

Mr. POPE. I think the remedy spoken of to be as good as anything I know, and perhaps the only remedy there is.

QUESTION. What in your opinion is the cause of sunscald? Is it the hot sun of July and August, or is it caused by the premature starting of the sap?

Mr. POPE. My opinion is, that when a tree has not enough foliage the heat of the sun scalds it.

Mr. SAWYER. I have experienced considerable difficulty in this respect with a few trees which are fifteen years old and quite large. I found it necessary to cut off some of the lower

branches, and where I cut them on the southerly side, or more to the southwest, the bark afterwards withered and came off in several cases nearly down to the ground, which I could not attribute to anything else but to the cutting of those limbs, while on the other sides of the same trees no injury resulted.

MR. POPE. I wish to know, if from the places where you cut those limbs the sap ran down during the summer?

ANSWER. I think not.

ALFRED SMITH of Monmouth. I think Mr. Sawyer is right in thinking that the trouble in his case resulted from cutting the limbs and not from the sun. In cutting a limb, especially if the water gets into it, it begins to die at a certain point. I think I never saw the white wood of an apple tree bleed at any time of the year. If it did I could not make the wax stick in grafting. Every one knows that if a limb is cut from a tree which is black-hearted, and the wound covered with wax, the water which exudes will run down and cause a black spot on the tree or limb, but I never have learned that that black injured the tree. I have often rubbed it off and found good bark beneath. It is only a coloring matter that you see, which comes from rotten wood and not from the white wood.

CHARLES FOSTER. I have been somewhat in the habit of working orchards in different places in the county of Kennebec, some five or six towns. I never remember of finding a single scald on the north side of a tree, or the under side of a limb. For the last seven or eight years I have been in the habit of setting trees with a cant towards the south and southwest. I have followed grafting for thirty years, more or less, and I do not remember of seeing the sap run out of a single apple-tree limb of white wood. In grafting there is danger of cutting off too much of the top at one time. I have generally been two years in trimming and grafting a tree and fitting it for bearing.

THE PRESIDENT. Do you prefer grafting the branches or the main stock?

Mr. FOSTER. I have been in the habit of grafting on the stock.

QUESTION. Which do you recommend as the best practice, planting seedling trees or trees grafted in the nursery?

Mr. FOSTER. When I first began to set apple trees, sixty years ago, perhaps, there was but little grafting done in this county, but of late a good many people in Maine have been setting New York trees. I have been in the habit of setting trees not grafted. In regard to New York trees, I have no doubt but they would do well if we take sufficient care of them, but to give them the care we used to forty years ago, they will not amount to anything.

Mr. SMITH. I have grafted with you (Foster) a great deal. My experience is, decidedly, that in this State we had better set seedling trees and graft into the body or branches. If the bodies are too long, they should be cut back. I hold that we had better have the trees nearer to the earth. Everybody ought to know how to graft. It is a very simple thing to do. Every boy ought to learn it. I could relate my experience in learning, but will not take up the time. In relation to cutting large limbs and grafting all in one year or otherwise, I believe it is better to start the scions all in one year, leaving enough limbs to be renewed gradually afterwards. In that way you keep the trees balanced, and all the scions start together. When I first began to graft, the under limbs were left for the next year; we grafted the best part of the tree, and they would grow rapidly, while the lower limbs, grafted afterwards, were always behind and would never get up again. When scions are put all over the tree, and started at the same time, you will have an equal growth. In a small tree it will do to cut off the entire top; in a large tree I would not generally do it.

Mr. BERRY agreed with Mr. Smith on the last point.

N. R. PIKE of Winthrop. I would ask, if a tree needs cutting back, what time would you prefer to do it?

ANSWER. It is better to be done before it leaves out. I have succeeded well in that way, and have seen a great many handsome trees set out with large tops and they never became well established and growing on account of this very thing; and when I have grafted them, I have found them to be black-hearted; whereas if they had been properly cut back and allowed to go until the next year, it would have been much better. I think it is well to cut about six inches above where you intend to graft, and let it go one year.

MR. PIKE. I would ask whether you set the scions the first year?

ANSWER. I have succeeded well in that way, and I can show you handsome trees done in that way.

MR. FOSTER. In regard to this sunscald, I made up my mind years ago that it was owing to the freezing and thawing of the tree in the winter. I have worked in orchards of 18 to 20 acres, and I have found the tops of trees where they came to the sun that the bark would crack open. I have noticed it frequently in the woods, on the side of the tree facing the sun sometimes two or three feet would be dead, and I have thought it was owing to the sap starting and freezing in the winter and killing the bark in that way.

MR. WHEELER of Winthrop. I have had some experience in grafting; have done considerable of it some years; have set 30,000 scions in one year. I have always made it a point to go into a tree and examine and look it over and see how to shape the top. I think that is one of the first things necessary. I always want scions that I know to be good, and in grafting large trees I leave some of the smaller limbs between the scions and the stocks, to help carry the sap to the scions. I have noticed failures where the trees have been cut back too much, and in many cases complete failures. There has been something said here, I think, in regard to cutting the whole top of small trees. I think the better way is to get trees large enough to graft into the branches. I think there is danger of forcing trees too much before they are set out. Within the past four years I have lost two

trees. The sap started in a warm time and caused the bark to start, and I am of the opinion that sunscald is produced somewhat by the starting of the sap prematurely.

MR. SAWYER. You mean too early in the spring?

ANSWER. Yes. I have not put out many trees lately. The few trees I have set I have raised myself, and I have a few very good trees. I believe we can raise trees here as well as anywhere, with proper care and labor.

QUESTION. You plant seedling trees?

ANSWER. Yes, sir, I prefer them.

QUESTION. What time of year do you prefer to cut scions?

ANSWER. I think it is best to cut them in the fall.

MR. PIKE. There is a point introduced by Mr. Sawyer in regard to cutting the large limbs, and the bark dying below where the limb is taken off. I think that cannot be termed sunscald, for in my experience you are as likely to have that upon the north side as upon any other.

MR. SAWYER. I have not found it so.

MR. PIKE. I have, and my experience is that when you take off one of these limbs the sap cannot flow; there is nothing to take the sap, so it runs through under the bark and corrodes and kills the bark.

THE PRESIDENT. It is time to take up another subject, but I wish to enquire in regard to the practice of orchardists, whether they prefer to set seedlings or trees grafted in the nursery?

MR. ATHERTON. I would like to have time for this subject to be discussed more fully in regard to whether it is best to graft in the stock or in the branches. I suppose this discussion was drawn out by Dr. True's paper, and if I am not mistaken he alluded to the subject of grafting. Downing says, I think, that the trees ought to be allowed to grow one year before grafting them, but that it might be necessary in some cases to graft in the same year that the tree was set. What I am coming at is, whether it is better to graft in the limbs or stock, for I am going to set more trees in the coming spring.

The PRESIDENT. The question of Mr. Atherton was answered previous to his coming into the room, but for his benefit I will say that the opinion of those who have had experience in the matter is, that it is better to graft in the branches, and that is the general practice, unless in shaping the tree it becomes necessary to take the whole top off.

OAKES HOWARD of Winthrop. I wish to say a word in relation to the sunscald. The question has been pretty thoroughly discussed, and the opinion is that we suffer more or less by it. Now, what I wish to know is, in regard to a remedy.

The PRESIDENT. The point is very practical; but this discussion is taking too much time. I wish to call your attention to another question just now propounded, and ask the opinions of gentlemen upon it. I will ask of Mr. Carr whether he prefers to set grafted trees or seedlings?

Mr. CARR. I prefer the seedlings. I don't want a tree grafted until it is set.

Mr. POPE?

ANSWER. Seedlings by all means.

Mr. ROBBINS of Winthrop. I certainly should favor the seedling trees, and also grafting in the limbs, although I have had some success with trees grafted in the nursery.

F. M. WOODWARD. I set seedling trees mostly, and prefer them. There is a point which I wish to present, and that is, why you graft in the body of the tree? I would never do so if I could avoid it.

Mr. FLOYD. I prefer seedling trees, by all means.

The following resolution was adopted :

Resolved, That this society recommend the setting of seedling trees, to be grafted in the limbs or stock, rather than trees grafted in the nursery."

The PRESIDENT. We will now take up the subject of Crab Apples. First, we have a paper by Dr. Reynolds, and after that we will devote some time to discussion of the subject.

RAISING CRAB-APPLES.

BY HENRY REYNOLDS, M. D., AUBURN.

Fruit-growers in Maine have had much to discourage them during the past ten or fifteen years. The severity of the winters and the ravages of insects have destroyed a large part of the old orchards, while numerous difficulties beset the raising of new orchards. It is an acknowledged fact that trees do not grow so readily as they did fifty years ago. Then, if trees were set out, a flourishing orchard was pretty sure to result, whether any care was taken of the trees or not. Nearly all that seemed necessary, to secure a good tree, was that the seed should be placed in the ground or the tree set where it was desired to grow; almost invariably a good tree would be produced.

Now, it is altogether different. The tree must be transplanted with extra care, placed in a good location, in the best soil, cultivated, manured, protected from mice, borers and other enemies, in fact tended and cared for almost as industriously as a child is cared for, in order to secure a tree. Even when the tree has at last been produced, the owner is not sure of long possessing his treasure. Insects may destroy it, frosts may kill it, or disease blight and blast it.

In view of all these difficulties attending apple-tree culture, it is not strange that many at times have become discouraged, and look about them for trees of a more hardy character than the varieties usually cultivated. Obliging and enterprising tree agents have aided them in this search, and presented for their consideration the crab-apple. The case of the crab-apple has been ably presented by its earnest and unwearying advocates. The case at first was presented a little stronger than it would be prudent to state it at present. The crab-apple was said to be just the tree to endure our winters, would grow thriftily, bear abundantly, and the fruit sell at fancy prices. It was claimed that when the common standard kinds of apples were selling in Boston at two to three dollars per barrel, the crab-apples sold at six or seven dollars,

and were in demand at those prices far in excess of the supply. By engaging in crab-apple culture, astonishingly profitable results were predicted and anticipated. It was urged that the demand would be almost unlimited; that those not used for cooking purposes could be converted into cider, which would sell at fifty cents per gallon—crab-apple cider being a very superior article.

The agents who had crab-apple trees to sell, seemed to believe that they had a good thing, and tried to impress the minds of farmers with some adequate conception of the great importance of crab-apple culture. Their success was quite encouraging—to themselves, at least—and large numbers of the trees were sold. Not a few purchased crab-apple trees sufficient to set a small orchard, imagining that at last they were on the high road to success in fruit culture. They did succeed in growing the trees very well. There were quite as many that lived and grew as it was for the interest of the owners to have.

There is no doubt the crab apple trees are hardy and adapted to endure our climate. This point has been satisfactorily established. The trees are thrifty and productive, and come into bearing very early. So far as all these points are concerned, the crab-apple tree culture in Maine has proved a complete success. There seems to be no doubt that we can raise any number of large, thrifty, and productive crab apple trees. There can be no fault found with the representations of the tree agents regarding these qualities.

There is, however, a serious drawback attending even the crab-apple business; and that is, the apples do not sell well. This seems to be a great pity, when it is so easy to raise them and the trees are so thrifty and endure our winters so well! Instead of being in demand at \$6 to \$7 per barrel when other apples are worth only \$3, the demand last autumn was not brisk for them at \$2 to \$3 per barrel while other apples sold at \$3 to \$4. In fact, there is a very limited demand for crab apples at any price. They are used mostly for preserving, and seldom used for other cooking purposes. It is easy for

any one to see that the demand for crab-apples can never be extensive enough to consume a fourth part of the product of all the trees which have been set.

What is to be done with them, then, it may be asked? Use them for cider, some one says, and sell the cider for 50 cents per gallon. Of late years we have not heard anything about selling crab-apple cider at fifty cents per gallon. I presume it would sell at about the same price as other cider. But, suppose the crab-apples be made into cider. Imagine a man picking crab-apples for cider! Crab-apples cling tenaciously to the tree. They seldom fall off, high winds do not blow them off; a man in the top of the tree, shaking the tree vigorously, makes slow headway in shaking them off. In short, crab-apples have to be *picked off*. They are very small in size. It requires hundreds of them to fill a bushel basket. If a man were given all the crab-apples for cider making that he could pick during the whole autumn, he would not become rich fast enough to cause his neighbors to envy him at all. But when a man is obliged to raise as well as to gather them, then we begin to feel like sympathizing with him regarding his hard lot in life. Yet, for an opportunity to do this very thing there are many who seem to be taking great pains, purchasing trees, carefully attending them and giving them the use of their land; and for what? just to secure a harvest that is not worth harvesting.

It seems as though it were about time for farmers and fruit growers to stop buying crab-apple trees to set for orchards. Already there are more crab-trees growing than it will be possible to advantageously dispose of the fruit. It is all well enough for any one to set one or two crab-apple trees to secure fruit for his own use, and then when the trees begin to bear freely he will have as much crab fruit as he can profitably dispose of.

Some persons in setting crab-trees have thought if the fruit did not sell to advantage, that they could easily have the trees grafted to other varieties. This can be done, but there is considerable risk attending it, as our standard varieties of

apples can be grafted upon crab-trees with less certainty of good results, than when grafted upon our native trees. Besides, many of these crab-trees are produced by grafting upon the common apple stock, and to re-graft them occasions much unnecessary labor, at considerable risk to the life of the tree, without giving any advantages thereby.

The original crab-stock for grafting standard hardy varieties of apples upon, has been used by nurserymen who are propagating trees for the trade of the northern N. E. States. The claim has been made that a hardier tree was thereby secured, and one that will better meet the wants of orchardists in the localities above named, than would be the case if grafted upon common apple-stock. The practice, however, is of doubtful utility, and cannot be recommended. Indeed, experience as far as continued, proves no foundation for the claim of superior hardiness. We have hardy apple-stock, and to this we shall find it to our advantage to confine our attention.

The PRESIDENT. Gentlemen, you have heard the ideas of Dr. Reynolds in regard to the value of crab-apples. If any one has views which he wishes to present upon any point in the paper we will listen to them.

Mr. BRACKETT of Belfast. It seems to me hardly probable that this meeting will recommend the planting and raising of crab-apples, and I think the tenor of that paper accords well with the opinions of the members present. It seems to me there are other subjects more important. Therefore I move we accept the paper for publication.

Mr. SMITH. I fully agree with the paper. I would not alter a word of it. Crab-apples are not worth the picking.

Mr. ATHERTON. I have ordered eight crabs; I don't know but I shall change the order. Downing tells us there are some of them, though, which do grow to large size and are valuable.

Mr. CARR. I will call upon Mr. Litchfield, I think he brought some crab-apples here to exhibit.

Mr. LITCHFIELD of Winthrop. I am glad that the President sat in front of the place where those apples are exhibited so long as he did. I invested in five varieties of crab-apples sometime ago and have them growing now. I do not condemn them all. I have one variety which is valuable, and one that is good for nothing; it cannot be cooked or eaten, or given to any creature. So I have a large lot of them. I hope nobody else will be taken in as I have been with this kind of tree. I have another variety which is valuable for preserving.

QUESTION. What kind of an apple is the General Grant?

ANSWER. I have not got it and I do not want it.

JOHN MAY, Esq. My opinion is that the crab-apples are in general an immense humbug.

Mr. WHEELER. I have only a word to say. I have had a little experience. I have one crab-apple tree. I got the scions from friend Smith. I was considerably taken up with them at that time, but I have found them since to be worthless. Soon a yellow variety came around and I had the curiosity to try that. I grafted the tree over and put in the yellow variety. The tree bore well. These were pretty good to can up for sauce. By and by another variety came around—a Siberian crab. It was quite a large apple, was red and handsome. I grafted it again to that variety, and last fall it bore largely and produced a fine lot of sauce apples. I think it would be a good thing for every fruit-grower to keep one or two trees just for sauce and for home use.

The PRESIDENT. The point has been well made, What is the use of crab-apples where we can grow good fruit? And that is a question every one should ask himself before he gives an order for crab-apple trees at extreme prices. Allow me to ask who would not prefer a bushel of Roxbury Russets to a bushel of crab-apples? Who is there that cannot make a better use of Winthrop Greenings than of crab-apples? Is not the Gravenstein or the Red Astrachan better? Again, who is there among these fruit growers who would not prefer

to raise a bushel of good fruit (and cannot do it easier) than a bushel of crabs, and who cannot sell them for more money? Of what earthly use then is the crab-apple? Why do people persist in buying them? Here comes in the question, Are there any localities where common apples cannot be grown, and crabs can? If you can find that place, there is the place for the crabs. Unless you find that locality I do not see any reason for growing them. I hold in my hand a catalogue of fruit advertised by a prominent fruit grower. He is inserting the Tetofsky as "an excellent apple," and entirely misrepresenting it. In connection with this subject, I wish to read a brief article which I cut from the *Maine Farmer* of last week, written by Dr. Hoskins of Orleans Co., Vermont; and you know that is a section of the State where the winters are hard and they find it difficult to grow many of the varieties of apples which succeed well elsewhere:

"CRAB-STOCKS AND RUSSIAN APPLES.

I read the letter of Mr. Smith of Monmouth in the last *FARMER* with much interest, and I wish to enforce what he says of the 'crab-stock humbug,' with my own experience. It has got so in Vermont that a tree agent says 'crab-stocks' to one of our fruit-growers almost at the risk of his neck. And now, as I judge from numerous letters of enquiry which I receive, these pedlers, finding no market at home for their trees, are flooding over into New Hampshire, Maine and New Brunswick in crowds, and defrauding many honest men with their plausible talk.

Let me say to your readers that the crab-stock has had a thorough trial in the northern part of Vermont, running over a period of nearly twenty years, and that the only result is utter failure. So far as I am informed (and I have probably as good a chance to know as any man), there is not, from the tens of thousands of crab-grafted trees sold through the country where I live, one single really successful orchard. The trees begin to fail almost as soon as they come to bearing, and excepting a few cases where, by deep planting, the trees have rooted above the graft, they rapidly become unthrifty and die. The experience is very nearly that of pears on the quince, only the failure is worse. In many cases not only is the tree unhealthy, but the fruit seems to partake of the crabby nature of the stock to the extent of being uneatable and unsalable.

One point in Mr. Smith's letter, however, needs a little correction. Twelve years ago I believed, like him, that the Northern Spy, Talman's Sweet, Yellow Bellflower, and the Winthrop seedlings Moses Wood and Fairbanks, were as hardy as the Russian apples, Duchess of Oldenburg, Tetofsky and Alexander. This belief has been a costly one for me, and

will be so to all your readers living in Northern Maine who accept it. I set dozens of those "hardy Maine apples," and they are all dead or dying, while my orchard of Tetofsky and Duchess are thrifty, productive and profitable. Yet, I do not advise the setting of Russian apples in Kennebec county, or anywhere where the Winthrop Greening, Moses Wood or Fairbanks will succeed. These last named are unquestionably better in quality than any Russian yet known. But for the Aroostook region, and all similar localities, I say set the Russians by all means, but not on crab-stocks.

T. H. HOSKINS, M. D.

Newport, Vt."

That is the opinion of a man who has had much experience in regard to the question of using crab-stocks for grafting as a means of securing extra hardy trees. Tree agents have been canvassing the State of Maine with good success in making sales of these trees, which he totally condemns.

C. R. RICE of Whitefield. I hardly see if so great a fraud is being practiced upon the people, why the names of the parties should be withheld from us, and I will call upon you for the name of the nurseryman you have alluded to; and I would like further to say that the section of country where I reside, has been overrun by parties doing the same thing, viz: swindling the people. They come in this wise: "There is a beautiful crab-apple tree. It will endure the winter, it is an annual bearer, it is tough and hardy, just what you want," etc., etc., and in this way a great many are buying quite large quantities of these crab-apple trees. I would ask what shall be the remedy? Who wonders that people are buying extensively? They are as a mass ignorant of the real character of the trees they are buying. They often really suppose they are getting a good tree; just what the agent recommends it to be. It is hardly right to say, "let them find out for themselves in regard to these matters." I think it one of the duties of this Society to enlighten the people of the State in relation to this subject. You see posted all through the State, little papers saying, "Wanted by such a firm, good, reliable, temperate men, previous experience not necessary, to canvass this State." And it is for these very crab-apples. I say, gentlemen, are we going to stand it? or are

we going to take measures to protect ourselves? We cannot do so by passing this question. We can only do it by bringing it before the people, and by presenting them with something better.

Mr. MAY. I think if people would only consider, there would be no need of their being imposed upon in that way. What gave it the name crab-apple? The name of itself is suggestive of the quality of the fruit.

Mr. BRIGGS of Turner. I wish to relate a little incident. When I was in Bangor at the State Fair a few years ago, there was a tree vender there from my own county, and he made the statement that he had made from crab-apples, cider, and from that cider, wine, which sold at \$8.00 per gallon. These are the very men whom we do not see at such meetings as this. I think there is much humbug in this direction.

Mr. LITCHFIELD. I notice the Secretary tasting a piece of a crab-apple. I would ask him if he thinks they will make good cider?

Mr. SAWYER. I wish to have the gentleman taste for himself. I should call it a *crabbed* apple,—bitter, astringent and totally worthless.

Mr. SMITH. If a man wants a tree for an ornament the crab-apple tree looks well in the fall when loaded with fruit, and in the spring with its blossoms. That is; I should suppose, about all we want of the crab-apple tree.

Mr. BRACKETT. I was about to say, that it seems to me that we are almost wholly united in our opinions on this subject, and it further seems to me there should be something done to go before the people of this State to show our disapprobation, more than simply to say that we merely objected to it. I think we ought to adopt a resolution condemning the practice of planting crab-apple trees in Maine, or that we regard them unsuitable for growing in our State.

Mr. POPE. There is another point which ought to be ventilated, and that is the use of the crab-stock for grafting.

The PRESIDENT. A motion to amend will be in order.

Mr. RICE. I would move an amendment. I think the

words 'totally worthless' should be inserted; that is, totally worthless for general growing.

Mr. SAWYER. For general cultivation or as a stock for grafting?

Mr. RICE. As being totally worthless for general cultivation, and also as a stock upon which to graft standard varieties.

The resolution offered by Mr. Brackett, as amended, was adopted.

Mr. Robbins of Winthrop then presented a paper on his experience in fruit culture, the manuscript of which was not presented to the secretary, and is, therefore, omitted.

Adjourned till afternoon.

At the opening of the Afternoon Session, a committee consisting of Messrs. Atherton of Hallowell, Briggs of Turner, and Rice of Whitefield, was appointed to examine and report upon the fruit on exhibition.

The first subject assigned for the afternoon was then taken up, viz: "What means are available, if any, to permanently restore the productiveness of our orchards?" and the following papers were presented:

OLD ORCHARDS, AND THE BEST METHODS OF RENOVATING THEM.

BY W. P. ATHERTON, HALLOWELL.

Allow me to call your attention to a very important, though familiar subject; a subject upon which much has already been said and written, and yet a subject upon which we need precept upon precept and line upon line. It is the matter of renewing or renovating our old orchards, and it may very properly occupy our thoughts for a few moments while gathered here to discuss the various phases and conditions of fruit culture.

Before proceeding to speak of methods of culture and improvement, indulge me a little in a few preliminary remarks concerning some old orchards in my own immediate neighbor-

hood,—orchards which were once large, thrifty and highly productive, but which are now partially dead, and whose remnants are rapidly going to decay; orchards, from whose limited history in age, location and manner of treatment we may gather a few hints to guide us in our search after truth. But these are not isolated cases; there are hundreds, and perhaps thousands of old and dying-out orchards, to-day, all over our State, some of them so far gone that of many of the trees it may be said, as we would say of an old and decayed tooth, "it had better be pulled out root and branch and a new one substituted, for that is the only way in which that tooth can be renovated."

I remember well some of the grand old orchards of my childhood's days; there was something enchanting and enticing about them, and to my mind there are no trees now that grow so tall, that lift their heads so majestically, or that wave so gracefully in the autumn breezes, and that are loaded so richly and heavily with golden, yellow and crimson fruit. The trees then were in some measure, at least, as nature designed and formed them, and the fruit as God made it, and I have often thought that no apples since have tasted half so sweet and good. It may be because, having no orchard of our own, that they were sometimes surreptitiously obtained, as Eve obtained hers. That was more than thirty-five years ago, and what changes have been effected since by heat and cold, by sunshine and storm, by depredations of insects and by the hand of man. It is truly astonishing, these wonderful changes; often we cannot understand or realize them.

Within a radius of five or six miles, there existed in those days six or seven large orchards, renowned throughout the State for their good fruit and great productiveness. The most famous of these were Dr. Vaughan's and that of Mr. Haskell. The others embraced the orchards of Major Haines, Mr. Frank Wingate, Mr. Joseph Wingate, and that of Dr. Weld, original owner Mr. Carr, I think. I have been informed, from reliable authority, that none of these orchards date their existence farther back than 1800. They were all set out about the

same time. Some in 1804, some a little later, and possibly some a little earlier; so that to-day none of them can be much over 75 years of age. I had supposed they were older. But taking this statement as true, what is the condition of these orchards as they now exist? What are they producing? What do they promise for the future? What are the facts in the case?

The orchard, or rather orchards of Dr. Vaughan, originally consisted of forty acres, in two fields of twenty acres each. One of these fields is situated at a short distance from the buildings, in a southeasterly direction, and on the south side of the road; more than one-half of this field, the eastern half, is elevated land and faces the west and northwest; it has been plowed and under cultivation several times during the past thirty years, but from some cause nearly every tree is dead and gone. The other and lesser half is lower land and consequently more protected; it is also moister land, and being rocky it has not been plowed much, if any, and on this portion I noticed a good many trees still standing; I did not go into this orchard or count them, but should judge there might be 150 or 200 trees.

In the other field, which in reality consists of two, one of about 17 acres and the other of about 3 acres, I took more pains to notice the number of trees left, and their condition. In the large field I counted just 150 trees, such as they were. They were evidently past renovation; at any rate, I would not waste much time or money on them. The land is naturally adapted to orcharding, and it must have been protected throughout nearly the whole of its existence by forests on the north and west. I was told by the present proprietors, that it had been plowed only once during the past 25 or 30 years. The smaller orchard of three acres lies under and has the protection of a hill, and is exposed to the full burning rays of the sun. Notwithstanding this, the most of the trees are remaining, but few having died; I counted one hundred. They need pruning, and the land needs to be improved. If something is done soon, the orchard will be good for ten

years and bear considerable fruit. I was told that twenty years ago, people remarked that the orchard would not last much longer; it was badly run down, and the land full of foul weeds; they bought a few sheep and put in, and the effect was so good they bought more and turned them in, and the land had been pastured to sheep more or less ever since. After commencing to pasture with sheep, a great change for the better came over the orchard. The trees were healthier, and there was more and better fruit.

But let us glance for a moment at another orchard no less famous; in fact, in some respects more renowned than the other. I have been informed quite recently, that it was once considered, by everybody acquainted with it, as one of the most productive and remunerative orchards in that vicinity. I refer to the old Hesketh orchard. It occupied a prominent position on the eastern slope of a very high hill. The majority of it was grafted, and consisted of the old standard varieties—Russets, Baldwins, Bellflowers, Greenings, Franklin Sweet, Talman Sweet, English Summer Pearmain, and others. The larger part of this orchard is still standing, though in reality but a mere wreck of its former pride and glory. Recently, one hundred of the trees have been cut down, and one hundred more, they say, ought to be served in the same way. There are probably from 150 to 200 trees still worth saving, and which by good nursing and liberal treatment may be preserved some time yet, and made to bear fruit with profit. One of the treatments given this orchard by a former proprietor, must not be passed by unnoticed. It was undoubtedly one of the causes of its great productiveness. It was this: He kept the orchard under constant cultivation, always sowing and raising oats; after the oats were off he would plow the stubble under and dress the land with manure purchased in the city, preferring to keep that made on the farm for field crops. Was not here the secret of his success? Not in the particular manure used, but in the constant cultivation and constant replenishing, so different from the spasmodic efforts with which we are too often



SECTION OF ORIGINAL VINE OF THE BRIGITON GRAPE. Growing on grounds of H. E. HOOKER, Rochester, N. Y.

afflicted? And may not this rapid and disastrous deterioration of the orchard be attributable, in great measure, at least, to an entirely different manner of treatment, whereby the land was seeded down and no after cultivation or replenishing done for several years?

Of the orchard once owned by Dr. Weld (originally owned and planted by Mr. Carr, I suppose), not much can be said. Of about sixty trees left standing, forty of them certainly ought to be pulled out root and branch. I think it has been plowed and cultivated considerably at long intervals.

It would not be worth while to make mention of the orchard formerly owned by Mr. Joseph Wingate, were it not for two or three facts worthy of note. The majority of the orchard is planted upon the side of a hill, the entire slope of which faces the east, and consequently not exposed to the coldest winds. The oldest trees have outlived the youngest, which were planted on the top of the hill. A portion of the orchard has not been plowed at all, or at least but seldom, and it is in better condition to-day than that which has been plowed and cultivated. The reason of this probably lies in the fact that the land is richer and contains more moisture, and that it receives the wash of the higher land and in some parts the wash from the barn-yard.

I now come to the farm once owned by Major Haines. He distinctly remembers that his grandfather came on to the place in about 1765. He said the first orchard set out was in a field of about three acres, a little northwest of the buildings. It must have contained once from 150 to 200 trees. Only about twenty are left standing. We cut down a number of them ourselves long before they were dead, because the fruit was worthless. But the Major, in conversation, has often referred to the orchard as being one of the most flourishing and productive in the neighborhood. He said they used to make eighty barrels of cider from that one orchard. Some of the trees must have lived to be more than a century old.

Downing tells us of two famous old trees which lived to be 140 years old, and bore that year, together, thirty or forty bushels of apples, and the following year they bore 101 bushels. He does not tell us how much longer they lived.

On the south side of the road, opposite the buildings, another orchard was planted later, as also some about the buildings, and rows by the road-side as far as the line of the farm extended to the east. We moved on to this farm thirty-three years ago. The orchard then was in its prime. It was very flourishing and productive, some of the Baldwin and Russet trees producing seven and eight barrels of first quality fruit. There is yet living and in fair condition, one large Russet tree, which the former proprietor, Mr. Thing, informed us bore thirteen barrels of nice Russets in one season. A small portion of this farm was owned by the widow Haines at the time of purchase by my father; it included a few acres of pasturage, and one acre and a half of orcharding, a part of which was grafted fruit. None of the former proprietors had been able to buy her out; she clung tenaciously to her thirds. All that she did to her part was to draw her annual salary, which consisted of a small amount of hay and a few barrels of apples. Year by year the hay diminished, and the apples grew less in amount, until she was glad to sell out.

When it came into our possession it was in a sadly neglected condition. The land had grown up mostly to golden rod and other weeds, and the trees were in a shameful state. The first thing my father did was to prune the orchard, and the second to plow the ground and till it, but that was so long ago that I do not remember the precise effect it had, only that there was a general improvement. However, a few years later my brother and myself had occasion to plow up the same ground; we planted to potatoes, putting on a good coating of manure. I remember the effect the manuring and cultivating had at that time, there was a decided improvement; the trees came out the following year with a much darker and richer color to the foliage, and the fruit was larger and of better quality. I have a distinct recollection of the effect on one

tree in particular, because we gave it a double dose of dressing, that is, put around it a whole cartload of manure. We did this on account of our partiality for the fruit, although only a seedling variety. The effect was almost marvellous. The apples grew to twice if not to three times their former size; and they were very much richer in flavor; and, whereas there was no market for them before, always going for cider, now there was a ready market for them; we sent in one year from that one tree, four or five barrels of nice fruit to Bath, as a good fall eating apple. They were so good that we might have introduced the apple as a new variety, and named it Atherton's Seedling, or Atherton's Favorite, just as some apples are named Williams' Favorite or Smith's Favorite, or Aunt Hannah's Best. One portion of our orchard has never been plowed. It has always been kept in good heart, partly from an annual wash from the barn-yard and road-side, and partly from top-dressings, and has always done well.

But I must not dwell at too great length on this part of my subject. It would be interesting could those old worthies arise from their graves and give us a personal history of their experience in planting and rearing these orchards. But they cannot, and we must be contented to glean a little here and there and apply it to our own times, either as an example worthy to follow or as a danger to avoid.

RENOVATION.

What, then, must we do to preserve our old orchards, and not only to preserve, but also to put new life and power and productiveness into them?

The very first thing to be considered is, the age and condition of the orchard. Is it on the last decline of life? Has it become so enfeebled by disease, by natural decay, and by the severities of climate that it will not pay to expend time and money upon it? If so, you ought to know what to do at once. To preserve the old elm on Boston common as long as possible, was a grand and patriotic idea. To stay up its broken and shattered limbs, to guard its decayed and feeble trunk

from the ravages of storms and relic hunters, was a work of love and duty, and no one begrudged the time and money required. But to try to renovate these old, broken down and worthless orchards of ours, that are on their last legs, to preserve these old stubs or scrubs of trees, because they were once fruitful, and because they are dear to us from past associations, is quite another thing. It cannot be the part of wisdom to spend time and money upon them. They had better be exterminated at once, root and branch, and new trees set in their places. Any orchard that is past 75 or 80 years of age, is beyond permanent renovation; it can only be nursed and bolstered up, and at best is a doubtful experiment; of course there may be exceptional cases. Any orchard between 40 and 50 years of age, will need and ought to have all the care we can possibly bestow upon it, and all the food material its condition requires. Any orchard past fifty years of age has begun to decline, and the rapidity of this decline may be lessened by constant replenishing; moreover, it will tend to keep the trees fruitful and from dying prematurely.

Having, then, settled the question of age and condition of the orchard, and determined the fact that something must be done to improve and replenish, we come to the question What must be done, and what is the best method to be pursued? There are a good many ways, but so much depends upon location, age and condition, character of the soil, means of obtaining fertilizers, and many other things, that it is almost impossible to lay down rules that shall be a criterion for all to follow. No cut-and-dried process will answer here. But, a few general principles may be laid down which will be safe to follow. First, we must prune our old orchards more frequently, and judiciously; and by this I mean, we must make it an inflexible rule never to allow any suckers or shoots to grow up about the trunks of the trees, and which disfigure so many orchards, and to remove all suckers and dead limbs as soon as they appear. Secondly, we must apply barn-yard manure or some other fertilizing matter to the soil more frequently, either as a top-dressing or plowed under.

In too many instances, it is neglect that is causing our old orchards to decay so rapidly, and in their renovation and improvement there are three general methods to be adopted. The first is, by the application of manure, lime or ashes to the surface as a top-dressing; the second, by plowing and working manure into the soil; and the third by grazing, either with sheep, swine or cattle.

Let us consider the first method. It is unquestionably the most natural one; a method in perfect harmony with the laws and provisions of nature. Our forests are annually mulched and top-dressed with decayed wood, leaves and plants, which decomposing and uniting with the soil, furnish a constant supply of nourishment. From an experience of several years in practical experiments in this direction, I am thoroughly convinced that if rightly applied it is beneficial. From actual tests, also, that it is better to apply our fertilizers, of whatever character, in a fine state, and annually or bi-annually, rather than at long intervals. That it is detrimental to our orchards to neglect them for several years, and then to apply a heavy coat of manure as a top-dressing. The reaction which is almost sure to follow any good effects, is quite serious. Moreover, top-dressing must not be relied on solely. In time the land will become hide-bound, so to speak, and then a change must follow; but a change of treatment should be made before such a necessity arises. Just as our bodies need a change of diet, so does an orchard, and the land must be in condition to receive proper nourishment or much of it will be lost; just as our bodies must be in a normal or healthy condition in order to appropriate and assimilate the food designed for them.

GRAZING OLD ORCHARDS TO IMPROVE THEM.

Let us look at it candidly for a moment, without partiality, without prejudice, and without bitterness. Every farmer will acknowledge, I think, that one of the easiest and cheapest, and laziest, of methods of renovation, is by sheep grazing; and at the same time he will own that it is one of the most

careless and slovenly methods. Undoubtedly it is beneficial to a certain extent, and many old orchards have been reinvigorated and made to live longer and to bear more fruit, but too much reliance is generally placed upon this method. No matter how large the orchard, or how much worn out the land may be, a few sheep are turned in annually, and they are expected or supposed to do the whole work of renovation. At least, I should suppose so from the condition of several which I have observed during the past year or two. They are supposed to do all the pruning and mulching, and replenishing of fertilizers. One of the most famous old orchards in Kennebec county, which I passed recently, was in a terribly shameful condition, because the poor sheep did not do their whole duty, or supposed duty. I think that under certain circumstances, sheep-grazing may be made to be one of the most economical and profitable methods; but, as in the case of top-dressing, the land will need to be plowed and re-seeded once in awhile, as also an occasional extra application of manure, ashes and lime, in order to furnish an abundant crop of rich and sweet grass for the sheep. I have known orchards to be brought to and made to bear heavy crops, by turning in swine, but it is not a very cleanly or pleasant method.

PLOWING OLD ORCHARDS AS A MEANS OF RENOVATION.

This is the last method that will be considered in this paper—already too long—and I am beginning to think that it is, par excellence, the best method. And why? Because by constantly stirring the soil it is brought into that perfectly healthy state whereby its proper food being received, is more rapidly digested and assimilated. Moreover, it is more subject and sensitive to all atmospheric influences, and to the genial warmth of the sun, and more readily absorbs and retains moisture. Consequently, the roots and fibres of the trees extend out farther and down deeper, drawing nourishment from sources unattainable by other methods. But a great deal depends upon how the land is plowed, and when it is plowed. I would not trust a green hand; either employ

an experienced man, or take the plow yourself. Do not plow deep at first, and more especially under the trees, and work the soil a little deeper each succeeding year, until satisfied that you are deep enough; in time you will have a deep, rich, mellow soil, and that is what you want for fruit trees.

One of the most healthy and productive fruit gardens of which I have any knowledge, is that of Mr. Calvin Spaulding of Hallowell. The trees consist of the apple, plum and pear, some of them quite old. The only dressing is a yearly application of horse manure, spread on in the spring and spaded in. On the land he raises a large amount of garden stuff, such as early peas, early potatoes, squashes, sweet corn, currants, strawberries and grapes, while the trees are always heavily loaded with fruit.

Lies not here the very foundation of all success—the yearly application of manure, though of but one kind, and the constant stirring of the soil? Can there not be some lesson drawn for us out of all these facts? And would it not be well for us, at least those of us who have old orchards, to plow and cultivate them? Cultivate them just as we would a field of corn or potatoes; apply, yearly, a dressing of manure, and occasionally one of lime and ashes. Prune them more frequently. Scrape off the rough bark early in the spring on wet days, and wash the limbs and trunks in a strong solution of soap or potash.

This ought to be a work of love and duty. "Freely ye have received, freely give," may be applied to temporal as well as spiritual blessings. He who robs his orchard, either in money, labor, or dressing, eventually defrauds himself. The work of renovating and replenishing our orchards may be a gigantic one, but our faith should also be gigantic. If we would see the land flowing with milk and honey, and the trees burdened with fruit, we must combine the highest intelligence of the mind with the wisest application of the plow. Theory and practice must go hand in hand.

ALFRED SMITH, of Monmouth, was next called upon, and read a paper on the same subject, with the following introductory remarks :

"I was much interested in the hearty welcome extended to the Society last evening by Mr. Torsey, in behalf of the citizens of this good old town of Winthrop. And I am happy to meet so many of my old associates with whom I first started in life. It was in this town that I had my birth, and my feelings often find expression in the words of the poet :

"How dear to my heart are the scenes of my childhood!

* * The orchard, the meadow * *

And every loved spot that my infancy knew."

It was in an orchard of seven acres, in this town, that I caught the pomological brain fever, when a child of nine years, which has followed me ever since, and I expect will follow me till I pass over to the *other side*, where men emerge 'angels from their clay,' and are permitted to eat the fruit of the 'tree of life that stands in the midst of the Paradise of God.'"

ON THE MEANS NECESSARY TO PERMANENTLY RESTORE THE PRODUCTIVENESS OF OUR ORCHARDS.

BY ALFRED SMITH, MONMOUTH.

Now, that we see the sad decline in our orchards and their products, and feel the necessity for renewed efforts to restore them to their original productiveness, the inquiry arises: What means are available, if any, to this end? The answer is—*intense, persistent culture*, applied yearly to our trees and orchards. It is evident, that comparatively few have acted on this principle, while the majority have left their orchards to struggle with the grass, and have even robbed them of that, which should have remained for mulching. It is also evident that they cannot compete with the grass and its thousands of rootlets, getting the best of the elements of plant food in early summer, leaving but a small portion for the trees. Therefore, such a course is nearly as disastrous to the growth and productiveness of our orchards, as the ravages of the caterpillars.

Now, then, if there is one formula of truth more apparent than another, it is this, that "whatsoever men sow, that shall they also reap." We, as pomologists and orchardists, are truly and surely reaping what we have sown. Those who have planted their fruit trees and orchards in suitable conditions, having all the necessary elements of plant food in yearly supply in the soil (the basis of all growth and fruit), and have persistently fought all pernicious insects, have gathered good harvests of apples, even during all the years of the prevalence of the caterpillars. I have been young, and now I am old, yet in all these years of experience have I never seen or known an apple tree or an orchard that refused to yield a yearly supply of fruit, if planted on suitable soil, having a favorable location, and careful treatment, (every tree, *the tree* cared for)—having every element of growth and fruit in yearly supply, and nothing to injure their physical condition.

Thus, this same truth is apparent, that we reap what we sow, in all the walks of life, and no less so in every branch and phase of agriculture. If we ask our Winthrop friends of the thorough-bred Jersey, how they obtain their gilt-edged butter, the reply is, "thought, enthusiasm, action; intense, persistent, intelligent feeding, thus making all the conditions in harmony with nature." Again, if we ask those interested in raising poultry, how they produce roosters that they say are worth from 50 to 150 dollars apiece, but relatively worth 50 cents,—or how they supply our markets with more bushels of eggs than farmers having orchards do bushels of apples, the reply will be, "good conditions; we reap what we sow."

Thus it is with the farmer who raises 100 or more bushels of corn, 400 bushels of potatoes, 600 of turnips, 600 of beets, or 200 bushels of strawberries per acre. We all understand how such products are obtained. We know it is done by care, thorough cultivation, and intelligent thought; by supplying the soil with elements suited to each plant, in sufficient quantity to produce the above results.

Again, if we ask the florist, or the lady who cultivates flowers, how they obtain such beautiful flowers, exciting such exquisite sensations of pleasure when presented to our view, and capable of calling forth that beautiful tribute of praise from our Lord, that "Solomon in all his glory was not arrayed like one of these,"—the reply will be, "we sow, plant and grow them in good conditions, such as their physical natures require."

Now then, must we, and shall we believe and act as though pomology were an exception to this never failing truth—that we reap what we sow—or are we so superstitious and stupid as to believe that Pomona (the goddess of fruit) is a respecter of persons, that she will give some, (her elect), beautiful orchards adorned with green foliage, and crimson and golden fruit, on which the eye rests with pleasure and delight, while to others having trees and orchards she gives nothing but pale leaves, interspersed with dead, unsightly branches? It is not so! There is no such god or goddess in the whole realm of nature. To all Pomona speaks in gentle accents, "make the conditions good, in harmony with my laws, care for and feed your trees and orchards with good food elements every year, in proportion to their size, age and ability to bear fruit; co-operate with your desires for fruit, and put your shoulders to the wheel, then come and offer at my shrine and I will help thee."

Now then, let no man attempt to plant and raise an orchard till he is ready to give his trees that care he knows to be requisite to produce an abundant crop of corn or potatoes. The apple and pear tree now must have care in all their stages of growth, from the planted seed to the mature tree, yielding its ten barrels of fruit.

Chemical science has developed the fact, that if you put enough plant food into good ordinary soil, to produce a certain crop, you can obtain that crop. If you put upon an acre enough plant food to produce one hundred bushels of corn, you can raise that amount. Then, of course, this truth holds good in raising fruit, as well—"we gather what we sow."

MR. TINKHAM of No. Monmouth. A number of years ago I got the idea that I could raise apples and sheep together. I have worked on that plan, and have succeeded very well. Of course, at first I made some failures, as every one will in commencing a new business. I got the idea that by fixing an acre of land and putting in four sheep, I could raise sheep without any considerable expense or labor; but I soon found out that the plan was a bad one,—that the sheep must have a living as well as the trees; and that the practice was simply robbing Peter to pay Paul. I changed my mode of operation. I said to myself, more sheep and more land. I never plowed a furrow in an orchard in my life, and I have done well. I raised sixty-five barrels of grafted fruit the last year. I have mulched considerably, but you cannot depend entirely upon that; it is an easy method of cultivation, and I must own that I like an easy way to do my work. Now a word in regard to setting trees. We read, and have been told that you must do your work in this respect "just so,"—you must hire a man and have him dig half a dozen holes in a day, and do it in a particular manner. When I hire a man to dig holes for trees, I want him to dig 30 or 40 of them in a day. I do not think a tree ought to be grafted the same year it is set. It ought to be let alone two or three years until it gets a good growth before grafting it. I used to have a great deal of trouble with scions dying. I think November is the time to cut them; then, if properly taken care of, you will have good, vigorous shoots from them. I would say a word on pruning trees. I do not think any two men ever agreed as to the proper time for pruning. I think from the 10th of August to the 10th of September is the proper time.

THE PRESIDENT. We wish to hear from the next man who can tell us how to raise good fruit in such an unfavorable year as the last. We have him here, and I hope he will volunteer.

MR. WOODWARD. You are mistaken in your man. I did not expect to be called upon. I will say that I cultivate my trees, and follow it up. I have practiced top-dressing considerably.

Mr. CARR. I think that heretofore we have not taken the care that we ought with our orchards. I have had quite good luck in raising fruit. The plate of Baldwins which I brought here this morning were taken from a barrel without any special effort to get the best,—right up from the top of the barrel. I also brought some Winthrop Greenings. Everybody knows that the last day of February is late for Winthrop Greenings, but I venture to say they will taste as fresh now as they would have tasted in October or November.

The PRESIDENT. I wish to inquire of Mr. Carr, if he has practised plowing his orchard?

ANSWER. I do sometimes.

Mr. FOSTER. I will ask Mr. Tinkham if he is troubled with borers where he pastures his orchard?

Mr. TINKHAM. I was troubled badly, but a copper wire and a good jackknife is enough for them.

Mr. CARR. How long does it take a borer to grow?

ANSWER. They develop in a very short time.

Mr. FLOYD. I defy any man to go over an orchard of 100 trees and get every borer the first time.

Mr. ATHERTON. I agree with Mr. Floyd. Let a man go through an orchard, I don't care how many times, some will escape his vigilance. I went over an orchard of 280 trees as faithfully as I knew how to, examining every tree, scraping the bark freely with the back of a knife, and some eluded me. I generally take with me a piece of wire. Hoop skirt wire is the best, I think.

Mr. ROBBINS. In regard to the borers, I think June, July, and even August and the first week of September, is the proper time to kill them.

Mr. Longfellow of Winthrop, was called upon for some remarks, and begged to be excused. Mr. Carr remarked that they (the Longfellows) had more apples in their cellar than all the rest of the orchardists of Winthrop, and enquired of Mr. Longfellow in regard to the number of barrels of fruit he had and the condition they were in.

Mr. LONGFELLOW. I have 150 barrels in the cellar, all russets. I don't know as there is anything I can say to interest you so well as others present.

QUESTION. How old are the trees?

ANSWER. Most of them are young—20 or 25 years old. Our old trees are run down, and do not amount to much at the present time. Most of our apples grow upon the young trees.

QUESTION. Are any of them in pasture land?

ANSWER. Most of them are in mowing fields. A few are in the pastures.

QUESTION. Do you top-dress considerably?

ANSWER. We top-dress mostly, although we mulch to a considerable extent.

QUESTION. Do you make a practice of applying the top-dressing under the branches, or further around?

ANSWER. As far as the branches extend.

Mr. FLOYD. There is one point of considerable importance in this connection, and Mr. Longfellow suggests it, and that is location. Mr. Longfellow has told us he raises the Roxbury Russets to a large extent. There are some soils where Roxbury Russets will grow well, and others where they will not. The soil of his farm is of copperas formation, and it is on that account, I think, that he has been so successful in orcharding. I have been familiar with the fact from my boyhood, that they raise good grapes and other fruits, but seem to be especially successful in Roxbury Russets. I think there is a ridge of land along the shore of the Cobbosseecontee that is particularly adapted to the raising of that fruit. Many years ago, at one point, they undertook to make copperas from these ledges, but gave it up after a short time. All along on these ledges apple trees flourish without any great effort. I do not think Mr. Longfellow has manured his land to an unusual extent. I have no doubt he has taken care of his trees, kept the borers out of them, etc., as every careful orchardist should do; but the great secret of his success is the location of his farm. I think it would not be

proper for this Society to recommend Roxbury Russets for all parts of the State of Maine. They would not do well. I presented to-day a plate of Roxbury Russets that grew on this same soil in an old orchard, perhaps 75 years old, and more. It had been cropped year after year with grass and hardly any dressing carried back, and the trees have borne year after year until the orchard was about starved to death. There was one part of it that had received a little better care than the rest. I plowed it up and hauled on dressing, and those old trees revived and started into life almost instantly.

MR. SMITH. My experience has been, that we can't get *something* out of *nothing*, and there must be something to get an apple from. I raised apples in this town sometime ago, on soil similar to that which has been spoken of. There was iron in it to a considerable extent. I removed from Winthrop to Monmouth. Found an orchard there well grafted, but in a sad condition. I have told this a number of times. Well, I began to bring it up, and since that time I have raised apples there as handsome as any of these on exhibition, weighing nine ounces. It is a granite soil. What I was going to say is, that I think russets may be grown on most any soil, if you put in the proper elements. I find no trouble in raising good russets in Monmouth, and I think others can do the same.

MR. HOWARD. I was in conversation with Mr. Longfellow sometime since, and I think he told me he could raise Roxbury Russets easier than he could Baldwins. Is that the case?

MR. LONGFELLOW. Yes, sir.

THE PRESIDENT. We are admonished to take up other topics. Still, I think we have established this fact in the discussion, although briefly considered, that there is a necessity for a greater attention in the direction of fertility if we would produce bountiful crops. In regard to the different methods, we have not had such a variety of opinion as might have been desired.

The subject of the Russian apple business, and the paper promised us by Mr. Fernald of Harrison, has been allowed to lay upon the table until the present time. I notice Mr. Fer-

nald is here, and I would inquire if he is ready to proceed with the consideration of that subject?

MR. FERNALD. I have to say, that I have written this paper quite hastily and under the pressure of a great deal of business, and there may be points connected with it which have not been properly considered. I will present it as it is, hoping it may be of some interest.

THE RUSSIAN APPLE BUSINESS.

BY GRANVILLE FERNALD, HARRISON.

About a quarter of a century has passed since the first departure was taken in the practice of renewing or replacing the orchards which were first established in the country, by the introduction of nursery-grown trees from the West. In looking backward through this period, and making a practical estimate of the advantages to the State, derived from the importation of that kind of stock, I confess the aspect of things is discouraging. Probably a million of dollars, possibly several millions, have been paid out by the farmers of our State for apple trees from New York and other nurseries. Has this vast outlay of money been productive of suitable returns to the people of Maine? It may be there are a few orchards of these trees in the State which are paying a profit on the original investment, but of hundreds of orchards composed of tens of thousands of Western trees, set since they began to be planted here, within the circuit of my acquaintance, I do not know of one that is in a condition of profitable bearing. You will find occasional trees of certain hardy kinds which produce fair crops of fruit, but as a rule the orchards of New York trees in a uniformly healthy and paying condition are very seldom to be found. I know of an orchard of about 100 trees, in the town where I reside, planted less than twenty years ago, of trees which were picked up by the road side or in the pasture and field; native, wild seedlings, grafted to Baldwins in the limbs or trunk when small, which has borne more good apples, and brought more money to the owner than all the New York apple trees I have ever seen.

Yet, with all these forbidding facts staring at us, there never has been, within the history of apple raising in the country, more anxious investigation of the subject of orcharding and the production of good apples than at the present time. At a period when in all the older States the orchards planted by the original settlers are showing unmistakable signs of being beyond the age of profitable fruit bearing, and are falling before the farmer's axe, or are being pulled up by the roots, and their venerable trunks and wide-spreading branches consumed by fire or hauled away to some by-spot to rot ingloriously, the demands of the country and the world at large, make it a question of great moment to the intelligent and aspiring farmer, whether he will plant new orchards to replace the old and dead ones, and supply the growing necessities for fine apples, or resort for a livelihood to other special courses of farming, or to growing a variety of products such as enter into the general wants of the country.

It will be readily admitted by all, that there is a genuine demand for large supplies of fruit trees to replenish or take the place of the exhausted and dying orchards of our State, and the facts implied in the brief glance I have taken at the history of the Western tree business here, will, I trust, be kept in mind, while I enter upon the discussion of a new departure in the history of apple tree planting.

About four years since, the tree agents commenced the sale of a new kind of apple trees under the name of "Russian." This title implied, and it was distinctly claimed, that the trees bearing that name had their origin in Russia in Europe, in high latitudes; and from this fact, they were supposed to have a greater degree of hardiness or ability to withstand the occasional extremes of cold and sudden change of temperature characteristic of our climate, so frequently fatal to all trees of tender constitution. The first named kinds which I remember to have seen were the Tetofsky and Pewaukee. Since the advent of these we have had quite a large list of trees introduced to notice as a class of hardy trees, which are claimed to be more valuable for our use than any of our

native kinds. It is a fact that a determined effort has been made to establish the trade in and use of these varieties of trees at very high price. What has been the effect upon the propagation and planting of our best old sorts? Contemporaneously with the introduction of the "Russians," old kinds began to be discarded. We were told it would not do to plant the old standard kinds; that they were not as hardy, and were destined to be superseded by the new kinds. The tree agents are not allowed to offer for sale more than two or three of the old famous sorts, as the R. I. Greening, Northern Spy, or Roxbury Russet, and say they cannot furnish standard trees at the former prices, at a profit; that the "Russians" are very costly to produce, and that the old standard kinds can be more profitably sold for fifteen cents each than the new kind for fifty cents. The average price for "Russian" trees for four years past has not been less than seventy-five cents by the dozen, though sometimes an agent will take almost any price rather than lose a sale. It is my opinion that the exorbitant prices charged for these trees had a tendency to discourage and dissuade many persons from purchasing at all, and that such prices are out of all proportion to the real cost or value of the trees to a great majority of our farmers. With this condition of the business in view, let us consider other well known facts, which are the direct consequence of the manner of prosecuting the trade by its numerous agents.

While the general interest in fruit cultivation is, as has been shown, greater than ever before, and while millions of dollars are being annually invested in the establishment of orchards, and great nurseries for supplying the increasing demands for good trees, there is evident a deep feeling of dissatisfaction with the manner of furnishing stock to orchardists for planting, a sense of being wronged, victimized, cheated. So intense is this feeling in many minds, that the dealers in fruit trees find it very difficult to operate profitably in many sections where they have sold trees very extensively.

heretofore. This feeling finds expression often in that cry which is one of the popular synonyms for deception or fraud, viz: "Humbug!" It is not confined to the ignorant man, who from lack of previous experience too late discovers he has been deceived, and vents his resentment in this common exclamation; but we hear it from the lips of the most intelligent men, who, viewing the tendency of the methods employed to effect large sales of trees, and the prospective influence it is calculated to have on the cause of pomology in the State, utter and repeat the cry more vehemently and with more earnestness of indignation than any other class. We hear it on all sides, from all classes of buyers. Men who have planted hundreds of trees only to see them die without ever beholding the color of their fruit, are crying "humbug," and cursing the "tree-peddlers." It comes from persons who never purchased a tree in their lives, and who are accustomed to echo the expressions and use second-hand the thoughts of others.

It is not surprising that such an opposition is manifested, and that ample causes exist, when we know the impelling inducements operating upon the tree agents under their engagements with those who employ them; not strange that the cry "humbug" is so often heard. Facts of every day occurrence prove that the agents for fruit stock are, on account of the adverse state of the tree business, obliged to resort to the most questionable methods to obtain orders for fruit stock. It is not considered sufficient or even essential that the tree agent shall be a man of gentlemanly manners and address, that he shall have had any previous experience in the business; that he shall have any knowledge of the art of tree culture, or of varieties or peculiar adaptation of soils or locations to certain kinds of trees. But he must be possessed of enough of the quality of stick-to-a-tive-ness to make sales of stock whether anybody wants it or not. He is expected to sell trees to men who do not want or need them. He *must* sell, and if he hasn't the "stick and hang" qualification he cannot succeed as a salesman.

Now, why does such a state of things exist? Does it not indicate a great wrong somewhere, and is it not a detriment to the pomological interests of our State, and a disgrace to such persons as have formerly supplied us with trees, that compulsory sales must be made at exorbitant prices in order to make it a paying business? that in default of effecting voluntary, bona fide contracts for the sale of trees, the unscrupulous agent is disposed to defraud his employer, and inflict a dastardly blow at the relations between the buyer and seller, which but for these contemptible tricks, these outrageous frauds of which many of the tree selling fraternity have been for years guilty, might have been amicable and satisfactory? A day or two since we read of an agent for a well known New York nursery firm being arrested and held to bail on a complaint for forging orders for trees amounting to \$3,000, on which he was to receive 15 per cent. commission. This is only one of many cases of daring forgery of orders for fruit stock; which acts are some of the most aggravating causes of the present condition of the tree trade. I know of men who are considered successful agents in obtaining of orders, who have no scruples against using the most dishonest means to make sales of stock. One agent, operating in a certain section of the State, happened in the course of his canvass to call on a couple of elderly ladies who were employed in making husk mats. They wished to have some trees, but had not much money, and declined to order any. This agent, with the pertinacity for which he is distinguished, and the artfulness of a villian, seeing a chance to sell some trees, immediately replied, saying he would take his pay in anything; he would take husk mats. And he succeeded in assuring these women that he would deliver the trees himself at the appointed time, and would take his pay in the products of their hard handiwork. It is probable they are still at work getting ready to pay for their trees in the spring. We know what the result is likely to be,—a demand on these poor women for the money in payment of their order, and a revelation of the rascality of the agent to the man who hires him.

These abuses are not confined to our own section, but have been prevalent in all parts of the land wherever the foot of the tree agent has strayed.

Mr. C. W. Garfield, Secretary of the Michigan Agricultural College, in an address on the apple orchard, delivered before a farmers' institute in that State two years ago, said: "Trees should be purchased, if possible, at the nursery where they are grown, and the nearer home the better. Those who simply deal in trees are usually unprincipled men. In truth, the terms tree dealer and liar are getting to be interchangeable ones."

Mr. J. H. Putnam, of Grafton, Vt., in an essay on apple culture, delivered before the Board of Agriculture, Manufactures and Mining, of that State, shows how the omnipresent tree dealer was appreciated in that section two years ago. He says: "Let me not be understood as condemning the whole race of *tree peddlers*; they are not *all* of them necessarily unmitigated scoundrels. A man may travel about the country selling trees and at the same time be honest, but it is an indisputable fact, that people have sometimes been woefully bitten. Selling a new, unproved variety of grapes at five dollars per plant, and furnishing a poor plant at that; selling the Tetofsky apple at one dollar per tree, and making folks believe the scion with which the tree was grafted came from Russia; selling people an endless variety of trees, many of which are in no wise adapted to the locality, and which with the best treatment will never prove profitable; promising to furnish first class trees; going to the large commercial nurseries of the West, and buying the refuse trees which the nursery-men will not send out themselves, and with these filling their orders,—these are a few of the sins of some tree agents, which the whole class are in a measure unjustly obliged to answer for."

The foregoing is a truthful and fair comment upon the class of abuses to which I have at some length referred, and will be endorsed by all who know the ways of the tree dealing profession.

Having pretty clearly stated my belief respecting the transactions of the travelling tree agents, it may be in order to inquire whether any responsibility for the frauds committed against the purchasers of fruit stock, justly attaches to the nurserymen, who are engaged, with the employment of large amounts of capital and an army of men, in constantly pushing their operations in tree growing? I believe from the information I have gained of the character of our leading responsible nursery proprietors, that they are men of integrity in business matters, which distinction, coupled with their well known skill in the production of the most perfectly grown trees, precludes the idea that the charge of fraudulent dealing can justly lie against them. Besides, those who are familiar with the annals of pomology, know that many of the leading proprietors of fruit tree nurseries are not only striving actively for commanding success in their line of business, but that they are devoted largely to the object of promoting the ends of scientific inquiry into the causes of failure in the various branches of fruit culture, and in laboring for the building up of the fruit business by legitimate methods. It is evident, therefore, that the self-sacrificing labors of these men, and the aid to the cause of American Pomology contributed by them, are sufficient to place them above the shaft of condemnation which is aimed by those who profess to see nothing in the whole business of furnishing trees to the poor farmers but a big, wholesale humbug.

Neither do I believe that all the men who are the responsible contractors to furnish the farmers with nursery stock, and who are the employers of the numerous travelling tree agents, are morally answerable for the disappointment and damage suffered by those who are unfortunate in their dealings with the tree-vending itinerant. I know of only one of this class of dealers whose headquarters is in Maine, and I am convinced, from my knowledge of his methods of operation, that he is an upright business man, and is in all cases disposed to be just and liberal with his customers, and has been known to discharge sub-agents for dishonest dealing, whether

it affected his own or his customers' interest. I know that he has for years furnished a good quality of stock—much better than the average brought here from the West, and it is a fact, that no large dealer in nursery trees in this State has given such general satisfaction to his customers as the one to whom I allude. But he cannot be cognizant of all their dealings, and of course many abuses are practised by the sub-agents of which he has no knowledge and for which he should not be blamed further than his responsibility is involved under the directions which he gives the selling agents for their general government in obtaining orders.

And now, in returning to the subject of the Russian apple, what, you ask, are my conclusions respecting it? During the investigation and research for facts, which I have given to it for many weeks past, I have found good reasons, I think, for some modification of the views and impressions I had previously entertained respecting the true character of the Russian apple tree, and the Russian apple mania. It is but natural that we distrust the methods and appliances by which we have been repeatedly deceived, and after an experience and observation of years of tree-buying and planting, with most unsatisfactory results, is it strange that we regard the efforts and the peculiar means employed to introduce new varieties of trees for sale, with somewhat of incredulity and apprehension? Although I have given the Russian apple trees a trial, and am watching their growth and development with much interest, I am not convinced that they are any more valuable to me, nor are they to any man whose location is favorable to the cultivation of our best old standard fruits. There are places in almost every town, where there is nearly every winter a degree of cold prevalent at certain times sufficient, if followed by a sudden change to warm weather, to kill almost any common kind of apple tree. For such locations the Russian apple trees are well adapted.

It must be remembered that of all the so-called hardy apple trees recently introduced and sold as "Russian," but two are known to be of Russian origin, viz: the Tetofsky

and Emperor Alexander, which were imported by the elder Manning of Salem, Mass. The Pewaukee, which has been sold largely for a Russian, is a seedling of the Duchess of Oldenburg, and originated by Mr. George P. Peffer of Pewaukee, Wis. The Haas, Walbridge, and others now being largely sold as hardy, and represented by many agents as "Russian," are natives of this country, and are deserving of intelligent trial, and will prove for many places hardy enough for all seasons. They are generally in bearing while young, which is a valuable consideration in deciding what to purchase.

Dr. T. H. Hoskins, of Newport, Vt., a gentleman of great experience and extensive information on this subject, to whom I am indebted for valuable facts, writes me as follows: "There is no 'humbug' about the apples; they are all good sorts, and valuable where extreme hardiness is required. They would be promising for all the northern parts of your State. But there is a great deal of humbug used in the selling of those varieties by peddlers. I have them all in my orchard and in my nursery for sale at \$25 per 100, yet the peddlers will sell them (or trees labelled with their names) all around me at \$1 apiece. I know no way to prevent this, as long as the 'Fool-killer' is so remiss in his duties." He adds: "I should not recommend any of these varieties for planting in those sections where older and well known sorts succeed. Even though as good, they would not sell as well, because unknown."

In concluding my discussion of the Russian apple business, I will say: these trees are yet to be further tested, and the fruits they bear must be better known before it would be advisable to invest largely in that kind of stock. If we can raise the Baldwin, the Greening, the Russet, the Northern Spy, the Bellflower and other well known kinds in abundance, I think they should not be discarded at the interested solicitations of a peregrinating ignoramus, who hardly knows an apple tree from a shad-bush.

While "humbug" is so naturally one of the subjects connected with this discussion, I deem it a duty to the cause of pomology to bring to your notice what I consider a more dangerous humbug even than anything chargeable to the Russian apple business. Within the last ten years, since the hardy kinds of crab apple trees have become well known, the impression has prevailed extensively that this kind of stock was the only reliable and safe thing in the apple line to plant, or that stocks and roots from the wild crab seed were more valuable upon which to propagate the finer varieties of apples, than stocks grown from seeds of common kinds of apples. This opinion, whether originating in the pretensions of interested tree-growers or not, I am unable to say, has nevertheless been sedulously fostered and encouraged by parties having or pretending to have large nurseries composed of trees grown on crab-roots; and by this means, and with the distinct understanding and agreement to furnish trees thus propagated, and which should be warranted to be more hardy, long-lived, productive, and as a matter of course, more profitable than any others, large sales of these trees have been made in this and other States, and in the adjoining Provinces, at prices much above the prevailing prices of the best standard apple trees of the most popular market varieties. I had an opportunity to converse with a man during the past autumn who is quite largely interested in growing apple trees for sale in our State, and is at the present time grafting large numbers of roots for planting next spring in this State, who claims that every tree he raises is grafted on a crab stock or root; that his trees are sure to be hardy, long-lived and productive; that by reason of using this kind of stocks, the trees are much more valuable for the orchardist than any trees whose roots are the offspring of any of our common apple seeds. He furthermore distinctly asserted, that all New York apple trees were grown on stock originating from common seeds taken from the pomace of the cider-mill, but that his trees were grown from wild crab apple seeds which cost him \$300 per bushel!

Being assured that these trees were preferred in Northern Vermont and Canada before all others, and that no others were safe to plant, I have sought for further information on this subject, and will give the result of my inquiry by quoting from a letter from a perfectly reliable source. Says my correspondent: "The crab root, or stock, has no advantages over good stocks from seed of the common apple. We do not find our trees dying from root-killing, except in places where the ground is bare all winter. In such places, crab-roots are killed equally with the apple. The trees are no hardier on crab-roots, not so long-lived, and except with a few sorts, not so healthy. On such stock the fruit of many delicate varieties is apt to be of small size, and affected more or less in flavor. The "wild crab root" used by the nurseryman referred to by you, is simply the Siberian stock grown from seed of the crabs so abundant in this section. They are used for *cheapness*, and are puffed as of miraculous virtue, conferring hardiness, fruitfulness, and exemption from all diseases and all insects. All of which is a fraud, known to be such by those who practice it, and laughed at as a shrewd game to gull fools. I know of many orchards planted with these trees during the last 18 years. I regard them all as failures—the failure becoming more and more conspicuous as the trees get older. I began my own orchard, 11 years ago, with crab-grafted trees, but soon discarded them. I have now 700 trees in my orchard on free stocks, which are in every respect as thrifty as any growing in my native county of Kennebec. The crabs have perished, or are rapidly perishing. I am convinced that the Siberian, being naturally dwarf, does not furnish roots enough for the tree as it acquires size. They become scrubby, bear little, and that poor, and finally die at the age when a tree on apple roots is coming into full bearing. While the trees are small they grow well, and encourage hopes that are not fulfilled."

In speaking of the laudable efforts of this Society to warn the public against the fraudulent practices of tree agents from abroad, he further remarks: "The vast majority of 'scrub

farmers' who never read at all, are the ones that make a market for the fraudulent tree agents. They are, in fact, victims of all sorts of frauds, and always will be. Every sort of villiany and quacking thrives on the ignorance of the people. The only remedy is to educate, educate, educate. They (the ignorant class) will always furnish abundant prey to the human hawks, wolves and hyenas who live by plundering and swindling."

Whatever I have said respecting the discouraging aspects of orcharding in consequence of the disastrous failures of western trees in this State, will, I trust, not cause any abatement of the present interest in the apple tree planting and culture. The orchardists of Maine have great inducements to persevere in their efforts to elevate the standard of their profession. Light and knowledge are taking the place of the gross ignorance of the past, and thoroughness in all processes of cultivation and general treatment of fruit trees, is succeeding in some measure the abuse and neglect of the orchards of former times. With the success attending the cultivation of the Russian and other hardy trees, there is hardly a spot in our State where good apples may not be raised, and every household be supplied to some extent with home-grown fruits.

Adjourned.

EVENING SESSION.

The PRESIDENT presented the following report on

THE NURSERY BUSINESS IN MAINE.

We have established the fact, based upon the opinions of prominent orchardists of the State, that we can produce here a stock of fruit trees, small fruits, vines, &c., in quantity and quality adequate to the demand.

It has been suggested that we should take measures to learn the amount of nursery business done in the State, and I have returns from a number of individuals and firms, in answer to a circular which I issued some time since, asking for reports from those engaged in the business, which I will read.

The first one is from N. R. Pike of Winthrop, who has eight or ten thousand apple trees, ready for market this spring. Every one who knows Mr. Pike, is aware that he is a reliable man, and that he will furnish trees such as he promises.

The next return I have is from Daniel Haines & Son of Parkman, who have a nursery of three acres, mostly grafted, containing about 30,000 trees.

Messrs. Perley & Perkins, South Vassalboro', have 20,000 apple and pear trees from two to four years old; also grape vines and other small fruits.

J. J. Towle, South Carthage, (nursery, I think, in Dixfield), 20,000 apple trees, and 1,000 grape vines, one-half of them suitable for sale.

Merrill & North, Wilton, nursery containing about 10,000 trees. "Have been in the business some time, and think our trees will prove as satisfactory as any in the State."

Jacob P. Smith, Cambridge, Somerset Co., 10,000 trees, not yet large enough for sale.

Bowman Brothers of North Sidney, have five acres of nursery stock, with 75,000 trees, about 6,000 of which are ready for market. They had very fine samples of their trees on exhibition at Waterville, last year.

E. G. Gordon of Solon, deals in small fruits, vines, &c.; also has a stock of nursery trees.

M. W. Reed, South Bridgton, Cumberland Co., says he has been in the business 35 years; keeps a general stock on hand for sale, of his own growing.

John Meade, North Bridgton, has a nursery stock of small fruits; has now on hand several hundred grape vines of his own raising, consisting of fifteen varieties. Can furnish them, he says, at lower prices than agents are now selling.

James A. Varney & Son, North Vassalboro', 40,000 apple trees, also a general stock of grape vines and smaller fruits; 30,000 trees ready for sale.

A. F. Severance, Nobleboro', has a stock, but does not say how large. James Millett of Warren, a small stock.

Mr. Hall of Auburn, has quite an extensive stock of very good fruit trees on hand. I regret much that I am obliged to report his nursery without any information concerning it, although my circular was issued in a Lewiston paper, and it seems to me that he ought to have reported.

Mrs. S. E. West of West Farmington, is engaged in the propagation of bulbs, plants, &c., for sale; not very extensively, but sufficient to supply a limited demand.

S. T. Whittier, Athens, residence in Cornville, 5,000 apple trees.

Moses Gilman, Sangerville, reports a stock of apple trees, without giving the number on hand or number ready for sale.

Daniel Partridge of Sandy Point, reports his address to me as a grower of plants, &c.

H. B. Williams, South China, reports a stock of 3,000 seedling apple trees, also an older nursery, from which he is making sales annually. Does not report the number.

These are the reports which have been received, and from them in figuring up I find they amount to 250,000 trees, in round numbers; from 100,000 to 150,000 of which are ready for market, consisting largely of seedling trees, but many grafted trees. I have knowledge of a large number of others, from whom no returns have been received, and I have no definite knowledge as to the number of trees under cultivation.

Mr. SMITH of Monmouth. I did not report my trees, from the fact that you [the President] was there, and I showed them to you. We have about 3,000 seedling apple trees, and some grafted, and about 500 pear trees; besides grape vines and small fruits.

THE PRESIDENT. Mr. Smith is here to report for himself. I knew he would be here, and consequently said nothing about his trees. There are many nurseries throughout the State, of which I have no definite knowledge. There is quite an extensive nursery at Mechanic Falls, which we do not care to add to our list.

QUESTION. Why?

ANSWER. As long as they have not reported, it is not necessary to explain, and I think they do not have the real Maine grown trees.

QUESTION. That is a point I wish to ask. How many of these trees are brought from New York? It is said that many of the trees sold as Maine grown trees are brought here from New York, kept in a nursery a little while and then sold. Don't let us be cheated on our own ground.

The PRESIDENT. I think I can say safely, there are none of those trees which I have reported that are not Maine grown trees. The extensive nurseries which I have reported here I am certain are Maine grown trees, originating in the State, and from Maine seed.

QUESTION. All directly from the seed, do you understand?

ANSWER. I do.

Mr. FLOYD. The question suggests a fact to me, which I am almost ashamed to state. A few years ago a gentleman of West Waterville advertised in these parts that he had a lot of trees to sell, which were growing in his nursery, and he said they were native trees. I bought some of them and set them out, and in two years every one was dead. I found they all originated in New York. They were sent here and had survived one year.

The PRESIDENT. Have I reported his name?

ANSWER. I hope not.

Mr. CARR. I want to ask a question, and I ask it for information, to put people on their guard. We get cheated often, and sometimes in our nest, as you may call it. I understand there are many trees growing in Maine, to-day, in that way?

The PRESIDENT. No doubt of that. And so far as the chair is concerned, he has had intercourse enough with mankind to know that every man must look out for himself.

Mr. SMITH. On that ground it would be safer for everyone to buy seedling trees, and graft them when he gets ready. He can get scions from any source. It would be a safer course, I think.

Mr. ATHERTON. I am willing, for one, to take it for granted that the majority of these men who are raising seedling trees are reliable men.

The PRESIDENT. I think we may be sure that the most of those we have reported are men to be relied upon, and that they are originating their trees.

Mr. RICE. Asking questions seems to be in order, and I will ask if it is not as well to be cheated in our own nest as it is to be cheated by a foreign nest, and have the money go abroad?

The PRESIDENT. We have but little time to devote to the further consideration of this question. I think that from the figures which have been given me, that we may calculate we have some 500,000 good apple trees in the State, now growing; and of these there is something like 200,000 ready for market, and these will go a great way towards supplying this State with trees. It would retain a considerable amount of money among us, and you would be as likely to get as good results—I may say better—than by buying trees from abroad. Will Mr. Rice pursue this subject further?

Mr. RICE. I do not rise to address you at length. I suppose I am speaking to many who are better informed on this subject, perhaps, than I am. I consider that this nursery business in Maine lies at the base of all our prosperity in fruit growing. "As the twig is bent so is the tree inclined." As the tree gets started so will it grow. I would like to hear this matter treated candidly and fairly. I do not think we do well to harbor any ill-feelings towards any person engaged in a lawful trade, even if he is a tree vender. Everybody is free in this country. We cannot place any tariff upon trees from other States. It is on the basis of free trade. What are we going to do? We cannot say the New York and Western trees *shall not* be brought in here. It is but fair competition. There has been a tendency during these sessions to point out evils and neglect the remedy, that is, without suggesting a *practical* remedy. What we want is to point out the remedy. This subject has been fully ventilated.

In fact Mr. Fernald's paper treated the subject about as fairly and fully as it could be treated. I was pleased to listen to it. Every nurseryman can make money so far as he does it honestly and is right in it. We have no fault to find so far as they are honest, although it is exasperating sometimes to go home and learn a tree vender has been at your house and secured an order from some member of your family. There was a time when we were dependent more or less upon the Western States for fruit trees, but that time has passed, and the time has arrived for the declaration of independence in regard to the nursery business. The time has come when the State of Maine can stand upon its own basis. I think the remedy is, in the State of Maine growing her own stock. I have no doubt that among the persons mentioned in the report you can find plenty of reliable men of whom you can purchase trees as advantageously as from the Western or New York tree venders. I want to say a word in regard to the expense of buying these shrubs, vines and trees from other States. I presume it would surprise any man in this assembly if he could figure up the amount of money taken from the State of Maine for nursery stock in one year.

QUESTION. What do you estimate the amount?

ANSWER. I have no statistics.

Mr. ATHERTON. I think Mr. Rice was going to tell us the remedy to prevent our good people from sending so much money from the State. Now, it is a fact that we send a great deal of money from the State for corn. I think Mr. Boardman says \$2,500,000 a year, and it is evident that we ought to raise more corn. I think the remedy for that is plain enough. It is so with wheat. We have been sending out of the State a large amount of money each year for our flour, and the only way is to raise more ourselves. That I think is the only remedy for us in regard to apple trees, for our own nurserymen to raise for us just as good trees, and in sufficient quantities, as can be raised out of the State, and furnish them to us at reasonable prices.

Mr. FERNALD. Perhaps I have said enough to day, but I would like to say a word or two on this subject. I treated the subject of the "Russian apple tree business," and subjects intimately connected with it, in as fair a light as I could under the circumstances. Having investigated the matter for some months past, and having obtained information from various sources, I felt impelled in justice to the people, to give them the result of my investigations. I do not think I have exaggerated anything. I am acquainted with many men in the apple tree business. Among them are some very good, honest, upright and reliable men, who pursue their business on strictly honest principles. I have known cases where some of this class of men have made good the losses which were occasioned by the mismanagement of their agents or by failures. I have had trees of some of these men which have done well.

Some say that in New York, in the vicinity of Rochester, and near Geneva, are the most favorable places for the growing of trees. They say the sudden changes we have here render it practically impossible for us to raise good trees. I do not consider this a good ground at all. I believe trees can be raised here in Maine, and that we ought to encourage Maine enterprise in this direction. I am glad to see so much interest shown in this matter.

THE PRESIDENT. We shall now be obliged to suspend the discussion of this subject, much as we would like to pursue it further, in order to devote a few moments before closing the session, to the subject of ferns and ferneries and the cultivation of flowers, in accordance with the announcement in the programme.

The SECRETARY. I wrote a few days ago to Mr. Vickery of Portland, a well known florist, and a member of the Society, asking for a brief paper for our meeting on some subject connected with floriculture, to fill a few moments. I have received in reply a paper which by permission I will read, regretting that Mr. Vickery is not here to speak for himself.

NOTES ON FERNS AND FLOWERS.

BY JAMES VICKERY, FLORIST, PORTLAND.

FERNS AND FERNERIES. Most of the ferns under cultivation are natives of warm countries, hence they require heat, proper drainage and suitable soil. The soil in which they do the best is leaf-mold composted with about one-fourth part fine sand. But the principal thing is to give them good drainage, whether in pots or in the fernery. In planting ferns in pots, put a piece of a broken pot in the bottom over the hole, and over this put some coarse materials, (siftings) before putting in the soil, and that will make a good drainage. Be sure to leave space on the top of the soil in the pot to hold water sufficient to wet the soil through. The heat they require is from 60 to 70 degrees, but some of them require fully 70 degrees. They should be kept from strong sun, but want plenty of light.

A great mistake is made in planting ferneries. Generally the pan is not deep enough to give a good drainage. The pan to grow good sized ferns should be from eight to ten inches deep. Put in the same soil as directed above. For drainage, cover the bottom with pieces of broken pots, and then a little charcoal, if convenient, but be sure and put in the siftings before the soil is put in, to secure a good drainage. When a fernery is first planted it should have a thorough watering to wet it through. They do not require watering often, because they cannot get dry the same as those in pots, for water cannot evaporate so fast. Many people think that a fernery should be air-tight, but this is a mistake; they do not require it.

Where do the ferns come from? They come from the wild forest, where all plants are collected from, where they all get a plenty of air, but are found in shady situations. As I said before, they do not like the bright sun in summer time, but in winter when the sunshine is weak it does not hurt them. Ferns like moisture and heat. Keeping a

fernery air-tight does not hurt the ferns for a little while, but when the glass and ferns get wet they want air two or three times a week.

The best time to plant a fernery is in September, to get it well started before cold weather, and it will keep good a year, then it should be replanted and new soil put in.

THE CULTIVATION OF HOUSE PLANTS. The principal thing required is to give them the right treatment through the summer months, to make them bloom in the house during the winter. I will speak first of the geranium, which nearly every one has who keeps plants. The best soil for them is composed of well rotted sods, with one-third part of old barnyard manure, and a little sand, if convenient, all well mixed. Young plants are the best for flowering, and the way to get them is to make cuttings in June or July. Put each cutting separately in a small pot, with one-half soil and the other half sand, well mixed. Keep them in a shady situation for about six weeks, under a tree or bush or cold frame. Avoid exposing them to heavy rains, for if kept too wet they will decay. After they are well rooted put them in three inch pots in the soil above directed, and give them a plenty of sun. Then about the middle of September put them again in five inch pots and put them where they are to remain through the winter, and they will blossom all winter. In the spring plant these geraniums in a good flower garden and they will flower well all summer. But do not take them up in the fall. You will not need them, for you have a young stock to take their place. By following this course every year you will have good looking young plants and plenty of flowers the year round.

CALLA LILIES. To have them flower well through the winter they must rest through the summer. The last of May I put my lilies in the garden, and lay them down in their pots on one side to keep the rain from wetting them, so they will dry up. The leaves will soon get yellow, and the sap will go back in the bulb and strengthen it while it is

resting. Keep them dry until the last of August or first of September, then take the bulb out of the pot, cut all the roots off close to the bulb, put in all new soil the same as for geraniums, and they will be sure to flower well through the winter. That is the way I treated my calla lilies last summer, and out of 130 pots I did not lose a single plant, and they have been blooming finely. Some of the strongest plants have had five and six flowers, and now it is only February, and they are looking finely, and likely to have as many more flowers by the last of May.

OTHER PLANTS. I will name a few more plants that will do well in dwelling houses through the winter. The Bouvardias are good winter flowering plants, but like the heat, and do the best at 70 degrees. There are five or six kinds, of different colors. There are the Begonias, three or four kinds, very good house plants for flowering, and will stand the dry heat of the room. The Chinese Primrose is a great bloomer, and will do well in any common room, either hot or cold, but not below 40 degrees. The Azalia is another good house plant, but must have the right treatment in order to have it bloom every year. It is a plant that will stand the heat or cold. The soil it requires is leaf mold, muck and sand. They do not bloom but once, but stay in bloom a long time. The principal requirement in order to have them bloom well is to keep them a little dry after they have made their growth, for that is the time the bulbs set for the next winter's flowering.

A great many ladies come in my green house and say, "Oh, I wish my plants looked like yours. It is the gas destroys them." But I do not think so. There is no gas escapes where it is burning. What the plants most generally want in dwelling houses is more moisture. Shower them more and keep the pores open. A great many people make a practice to water their plants every morning, and do water them whether they want it or not. That is not right. Too much water is as bad as not enough, especially in cold

weather when they are growing flowers. Examine the pots before watering, and if not dry do not water, for if you keep a plant too wet all the time the soil will become sour, and the plant will stop growing and probably die.

Mr. FLOYD. I regret exceedingly that there is no time to speak of the beautiful things God has made. I love these little flowers. I am aware it will not do to take up much time, so I will simply state the facts in regard to this little fernery which I have exhibited here. It is simply a tin dish; you can see its height. It is water tight. These are squares of glass cut in the usual way, and of the right proportions, and it is put together with mucilage and strips of paper.

The younger members of my family went into the woods and gathered a dozen different varieties of plants. They said they got them all on a piece of ground not more than two or three rods square, by the side of a little running brook, and they wanted to preserve some of them. There were four kinds of mosses, the partridge berry, and I don't know the names of all the kinds. They are here, and any one can see them. They should be ventilated and watered, for by keeping them too tight the moisture gathers on the glass which prevents one seeing the plants. There is nothing there for the plants to grow in except what was taken up with them in the forest. They were taken up in sections so as to disturb the roots as little as possible. I will not take up any more time. It is a pleasure to see them looking so fresh and green in the winter, and I would recommend others to try it. I think you will find yourselves fully repaid for your trouble.

THE PRESIDENT. We are forcibly reminded by this little fernery and by the remarks of Mr. Floyd, how easy it is to prepare such a collection for our homes, and to interest our children in such matters, and how much pleasure they will take in procuring and preserving them. I wish we might pursue the subject further, but we are admonished by the lapse of time that we cannot do so.

I find in the question box here only two questions, and find upon them answers in a handwriting which proves that

they are answered by one who is fully competent. I will read them.

Question. "What are the best five pears for a home collection in Central Maine?"

Answer. "Clapp's Favorite, Belle Lucrative, Duchess d'Angouleme, Beurre d'Anjou and Lawrence."

2d Question. "What are the best two varieties of grapes for Central Maine?"

Answer. "Either two of the following: Delaware, Salem, Wilder."

The following resolutions were presented and adopted:

"Resolved, That the thanks of the Society and audience are due to the several gentlemen who have presented essays and papers at this meeting."

"Resolved, That the thanks of the Society are hereby tendered to the Maine Central Railroad Company for the liberal reduction of fares to persons attending this meeting."

"Resolved, That the members of the State Pomological Society take pleasure in acknowledging their obligations to the Farmer's Club and people of Winthrop, for the kind and hearty welcome extended by them to the Society, for the ample facilities provided, and for their attendance upon and interest in our meetings."

On motion of Mr. Rice,

Voted, That the several papers and reports prepared for this meeting and not presented for want of time, be placed in the hands of the Secretary for publication in the annual report.

The PRESIDENT. We are now obliged to close the exercises of this convention, in order to accept an invitation to spend a short time in social intercourse at Grangers' Hall, which has been extended to the Society and its visiting friends. We thank you for your kind reception, for the help you have rendered, and the hospitalities you have so agreeably dispensed during our stay here. We hope to meet many of you again. Some have joined the Society, and we hope many others will enroll themselves as members and help us to carry forward the work in which we are laboring. I have no further remarks to make at this time.

In accordance with the invitation of the ladies and gentlemen connected with Winthrop Grange Patrons of Husbandry,

the Society and guests repaired to the hall of that organization, where a generous collation was served, and the evening passed pleasantly, with speeches, music, and social amusements.

FRIDAY MORNING—BUSINESS MEETING.

The Society met pursuant to adjournment, the President in the chair.

The report of the committee on the fruit exhibited at this meeting was presented and accepted.

The Treasurer presented his report for the year ending December 31, 1877, which was received and referred to the Executive Committee.

The report of the Executive Committee was presented by the Secretary, and accepted.

The President announced a vacancy in the representation of the Society in the State Board of Agriculture, in consequence of the resignation of Mr. James A. Varney, and thereupon the Society proceeded to an election by ballot, and George B. Sawyer of Wiscasset was elected as a member of said Board.

Voted, That the several Trustees be requested to furnish to the Secretary reports from their respective counties for publication in the next annual report.

Voted, To choose one or more persons in each of the several counties, to be nominated by the members from such county, to act in conjunction with the Trustees as County Committees, whose duty shall be to collect such useful and interesting information in relation to the subject of fruit culture in their respective counties as may be in their power, and embody the same in an annual report to the Society.

And such committees were chosen as elsewhere appears in this report.

Voted, To appoint the following standing committees, viz :

On Nomenclature—Messrs. Henry McLaughlin, Charles S. Pope and Samuel Rolfe.

On Entomology—Messrs. C. H. Fernald, George E. Brackett and Lyman F. Abbott.

The time and place of holding the next annual exhibition was discussed, and it was

Voted, That the matter be referred to the Executive Committee.

Voted, To accept James Vick's offers of special premiums to amateur florists, to be awarded at the next annual exhibitions, with the thanks of the Society for the same. [These premiums are the same as those offered by him last year and awarded at the annual exhibition,—see page 18.]

Adjourned.

REPORT ON THE EXHIBITION OF FRUIT AT THE WINTER MEETING.

The Committee appointed at the Winter Meeting of the Maine State Pomological Society, held at Winthrop on the 27th and 28th days of February, 1878, to examine and report upon the fruit exhibited at said meeting, submit the following report :

J. Pope & Son of Manchester, exhibited eight varieties of apples, viz: Baldwin, Minister, Peck's Pleasant, King of Tompkins County, Canada Red, Mother, Talman's Sweet and Ladies' Sweet. The Baldwins, Peck's Pleasant, Ladies' Sweet and Canada Red, were fine specimens. The specimens of King of Tompkins County, although past their prime, were considered worthy of favorable mention.

Alfred Smith of Monmouth, exhibited eight varieties of apples, viz: Roxbury Russets, Hubbardston Nonsuch, Baldwin, Rhode Island Greening, Cooper's Market, Talman's Sweet and Jewett's Fine Red—all fair specimens. The last named, considering the season, was a fine apple, while the Hubbardstons were of superior merit. Cooper's Market was a fine appearing apple, but concerning its merits as a variety but little is at present known.

A. C. Carr of Winthrop, exhibited three plates of Baldwins, one plate of Rhode Island Greenings, and one plate of Winthrop Greenings, all of which were of remarkable size and symmetry, and of very attractive appearance.

L. K. Litchfield of Winthrop, exhibited two plates of Baldwins and one dish of Soulard Crabs, the latter of which were marked by the exhibitor as worthless.

Willard Lecroix of Winthrop, exhibited a fine dish of Black Oxfords.

S. T. Floyd of Winthrop, exhibited one dish of Roxbury Russets, considered as very good specimens.

A. W. Tinkham of Monmouth, exhibited one plate of Roxbury Russets of superior size and merit.

Mention should also be made of a very handsome basket of flowers exhibited by Miss L. M. Pope of Manchester, as also of a fernery shown by Mr. Floyd of Winthrop.

C. R. RICE,
W. P. ATHERTON, } *Committee.*
D. J. BRIGGS,

LOCAL REPORTS ON FRUIT GROWING IN 1877.

REPORT FROM ANDROSCOGGIN COUNTY.

SOUTH TURNER, March 11, 1878.

To the Secretary of the Maine Pomological Society:

The apple crop in Androscoggin County, the past year, was almost a failure, particularly in the northerly part of the county. There were a few orchards in the southern part that produced some very good fruit. The old orchards have been stripped of their foliage, the past few years, by the caterpillars, so extensively that they have almost lost their vitality. There have been quite a number of young orchards set out within the last few years, to take the place of the old ones. There have been quite a large number of pear trees set recently, and they are making a very good growth. Almost every one who raises any fruit, grows a few grapes, a very few of which are grown for markets, but constituting only a small percentage of what are needed to supply the home market. I think grape culture should be encouraged in this county as well as in some others. Plums and small fruits are but little cultivated, except strawberries, of which there are quite an amount grown.

I would say here that I believe every man, whether he be young or old, that has a piece of land suitable for orcharding, should plant some fruit trees, if he has not done so already, both as a luxury and for profit. If we can raise our own fruit, it will be a saving of many thousands of dollars, in cash, to the county.

The Pomological Society is creating quite an interest in fruit raising in this county, as well as in the State at large, and if we can keep up this it will do a vast amount of good.

The price of apples at the time of this writing is two dollars and twenty cents per bushel in Lewiston market.

Respectfully yours,

D. J. BRIGGS.

REPORT FROM WALDO COUNTY.

The season of 1877 was one of almost total failure of apples, and of only moderate production of other fruits. In the markets, to-day, oranges are as cheap as apples. This is something so unusual that it is worthy of note. Trees did not put forth as much bloom as usual, and have made only a medium growth, owing to the severe drouth. They have, however, a healthy, robust look, that assures us they have vigor enough for a large crop in the near future.

The caterpillars were not very numerous or troublesome. Their depredations were easily guarded against, and average vigilance would keep the orchards free from them. Borers and the codling moth are on the increase. In some sections the borers are so troublesome that large numbers of pear trees are being set in the place of apple trees. Bark lice do a great deal of damage, and many do not realize it, or realizing it do not know how, or take pains, to rid the trees of these parasites.

The hard times and a better knowledge of fruit trees, works against the tree agent's sales to a considerable degree. A few past years it has been crabs largely; now it is the "iron clad Russian." The wild goose plum had its day, but not its generation. It led its purchasers a mythical wild goose chase after plums, but in nine cases out of ten, with all petting and care, died of croup or catarrh before the first plum appeared. Cherries, warranted black-knot proof; pears, that would grow in spite of all ill-usage; grapes, with promise of larger berry, greater clusters, and superior earliness, have been sold and planted out, and had the stock been good, and true to the bill, and had the planter given it proper care, Waldo, to-day, would be shaded by orchards, dotted with vineyards, and variegated with fruit gardens. Ship-building would be stimulated and fostered by the demand of bottoms to carry the product of our fruit-bearing woods, and the surplus of our teeming fields. But this was not so to be, or at least is not so now.

The great want of Waldo County, to-day, in the Pomological line, is not more trees, but better orchardists; not better varieties, but better care; not more tree agents, but *more manure*. There is not one orchard in our knowledge over-fed. There is but few properly fed; and there are hundreds simply starving to death. One tree properly fed is worth a dozen starving. Land rich enough for corn may do to start an orchard upon, but will not do to keep it upon unless its fertility is kept up and gradually increased. Trees must grow. They must bear fruit. They

do not cease growing when they begin to bear, hence the need of increased fertilization. Too many are afraid to manure their trees. It is well they should be, but there is no harm in manuring the ground they grow upon. It is hardly possible, in Maine, in Waldo county, at least, to hurt an orchard by manuring.

We should realize that a fruit tree, especially an apple tree, is not designed for an hour, or for a day, but for a hundred years. It is something to hand down from father to son, and to grandson. Then it is the part of wisdom to select a hardy, valuable variety; set only the best specimens of its type; carefully transplant it, with patience and common sense; prudently handle, and wisely manage it; feed it, protect, direct it by judicious pruning, and watch over it lest it receive damage from any source, and our tree will kindly respond. It will show its pedigree, its bringing up, its care. Such a tree will pay better than whole orchards we could name. This tree will have a green old age, an extended longevity, and if change comes at all, only for the better.

The culture of the grape is on the increase. There is more enquiry for early maturing, hardy kinds. Only a short time since and a vine in Waldo County was a rare sight; now a family that is destitute of one or more is rarer still. They are highly prized for preserving, as well as for dessert dish, or food for the convalescent. Their culture is becoming better understood. Those finely pruned vines in mathematically correct diagrams, frightened the common people. "Oh! I can never do it." It was thought to be the only way. A scientist and mathematician combined, was needed to carry it out to a nicety. That time has gone by. That humbug has exploded, and the common people can raise a few grapes now, every one of them, by planting their vine and caring for it only as they would their hop vine, or honeysuckle. If they do not get enormous bunches for exhibition, they get some fruit at less expense, which answers their turn.

Strawberries are cultivated in greater breadth year by year. It will be a long time yet before the local markets are supplied. There is a demand that grows faster than the strawberries, and this keeps up a remunerative price. Cranberries, also, are largely consumed, but as yet sparsely grown with us. We have excellent cranberry lands, and good cranberry lands are good for nothing else. The Lord never made anything that cannot be put to use, but he made some that have not been. We have some good cranberry plantations, but not the good many that we ought to have. The cranberries raised in some sections of the State, are hollow. This is not the case with those grown in this section.

The work of the Pomological Society is being felt in every part of the State, to which Waldo county is no exception. This work and the literature of the fruit growing of Maine, is not yet duly appreciated. No society, so far as my observation extends, has accomplished so much good in so short a time. But the work is just begun. It is but just mapped and planned. The campaign is but just opened. The brush is only just cleared away preparatory to a more useful planting. Light is

beaming from the darkness in many places, which will increase, and eventually break forth into the full blaze of day.

J. W. LANG.

[Not having received the reports which were expected from the Trustees in the other counties, and it being impossible to make any further delay in the preparation of this part of the work, the Secretary avails himself of the following articles selected from the newspapers of the State in the autumn of 1877, giving a general review of the condition and prospects of fruit growing in the State.]

THE APPLE.

What wheat is among the cereals, it seems to us, the apple is among the fruits—the most important, the most useful, the most indispensable. Commercially, it is one of the most important products of the temperate zone, and from the ease with which it is grown, the period of time which it covers—compassing in the season of its usefulness almost the entire year in its green state, while the market is never without the dried product—and the ease with which it may be transported from one section of the country to another, it, more than any other fruit, contributes to the real wants of the human family, while adding largely to the commercial interests of the country.

When we experience, as we are doing this year, an almost utter failure of this important crop throughout New England, we are led to realize to a far greater extent than we could ever do in years of an abundant yield of apples, how great a loss it is to be deprived of them, and how useful a part they contribute in the household economy. To be deprived of them is to suffer the loss of one of the most essential elements of good living—a loss which nothing can really make up. They form an economical and very healthy article of diet; and when to be had at a cheap rate, furnish a means of subsistence that is unrivaled for economy and healthfulness. They require but little sweetening to make a good sauce; are excellent for pies; esteemed a luxury when baked, with the addition of a little sugar; and as a desert, or for the use of children at “all hours of the day,” nothing can take their place. In short, the apple is the fruit for the people, and one never tires of green apples, apple pie, or apple sauce, any sooner than we tire of flour bread or biscuit and butter. It is true, we have the cranberry; but the cranberry is essentially an aristocratic fruit, requiring a large amount of sugar to render it palatable—and then we have all forms of canned fruits; but these in no way make up for the loss of the apple, and are not consumed to any great degree in its stead.

Throughout our State, and generally throughout New England, the apple crop this year is very nearly a complete failure. For this there are

some easily understood causes. To begin with, it is not, generally, a bearing year. Then, again, in most sections of our State the trees have been so ravaged by caterpillars during the past three years, that it has taken all their vitality to maintain life, to say nothing of the accumulation of force with which to give a crop of fruit. Farmers who have in past years derived a handsome revenue from the sale of apples, must be content to get nothing from this source the present fall—a loss which will be as sorely felt by some, as the absence of the fruit will be to others. And it is a question worth considering, if we should not find it profitable to put on, as many good orchardists did in past years, a sufficient force of workmen to keep the caterpillars in check, should they ever come in force again; and to so heavily manure our trees that they may bear every year whether the year be “odd” or “even.” Cannot this be done?—*Maine Farmer*.

FRUIT-RAISING IN MAINE.

Fruit-raising in Maine, during the past few years, has been on the decline. There are probably twenty-five per cent. less apple trees in bearing condition now than there were three years ago. The ravages of the caterpillars cut off the apple crop two years, and left the trees in such an enfeebled state that the crop this year is the same as a failure. Large numbers of trees having been killed by the effects of the ravages of the caterpillars, farmers have been disinclined to purchase young trees for setting new orchards. Their old orchards, they have seen to be unprofitable and barren for three years, and they are not certain that it is going to be a good thing for them to set more orchards.

Fruit-raising in Maine should take a “new departure,” and assume the importance which its merits deserve. No other branch of farming can be made to pay the large and continued profits that fruit-raising can be made to yield. An orchard of young, thrifty and productive apple trees is the best investment that any farmer can make. If a man owns a good orchard and takes care of it, he is as sure of a good crop every year as he is of a crop of corn or potatoes. Even during the past three years, those who have taken good care of their orchards have received remunerative crops of fruit from them. Those who protected their trees from caterpillars in 1875 and 1876, harvested good crops of fruit, of four times the value of what it had cost to protect the trees, and this year they will also harvest a fair crop, and the high prices will make it a very valuable one.

The experience of the past three years, however disheartening it has been to those who failed to protect their orchards from the caterpillars, has been full of encouragement to those who have protected the trees. They have learned that the apple crop is a sure crop if well cared for. Those who have taken the best care of their orchards have secured the greatest profit from them.

In caring for an orchard, it is not sufficient to keep off insect enemies. Something more is required. It is true that orchards will produce in ordinary years some fruit—often quite a fair quantity—but with very

little attention other than to gather the fruit when ripe. The fact that apple trees do sometimes succeed remarkably well thus neglected, should be a basis for encouragement in adopting a better system of culture. No other producing agent on the farm responds more generously to good culture than does the apple tree. Yet no other farm crop is so generally left to look out for itself.

Fertilizers and farm manure are as essential to the best results in apple-raising as in corn-raising. Land that is in good condition will produce a little corn without manure, and so will an orchard without fertilizers, produce a little fruit. A heavy application of manure and fertilizers to the corn-field produces a large crop of grain, and pays a handsome profit on the expense. So the application of manures and fertilizers to the orchard produces an abundant crop of large, fair apples which will sell at a good price. If the trees are fertilized every year, they will bear a pretty good crop of apples every year. The income of a large orchard of grafted fruit well cared for, proves one of the most reliable of any crop on the farm, and is one of the most substantial supports of the farmer. There are many orchards in this State, that previous to 1875 yearly brought more money to their owners than all the rest of the farm.

It is not recommended that every farmer should engage in apple growing. Some farms are ill adapted to apple trees, and it would prove uncertain business at the best, to attempt to raise them to any extent. Other farms, however, seem peculiarly well adapted to the apple tree. The trees grow thriftily, and are hardy and productive. Oftentimes such farms are stony and worth very little for other purposes except grazing. The farmer who owns such land should make orcharding his principal business. The apple crop should be his principal crop, and he should apply his manure and fertilizer to secure an abundant yield. In some towns in Maine, most of the high land is eminently well adapted to apple orchards, and the owners of such land should engage extensively in the culture of the apple. One man can attend to a large number of apple trees, covering several acres, except when the harvest time comes, when, of course, more laborers will be required. But, at other seasons of the year, the farmer could attend to his orchard himself, without the aid of the hired help, which would be needed if he cultivated hoed crops extensively.

Some refrain from setting young orchards, because they think it will require almost a lifetime for the trees to come into bearing. Much less time than is usually supposed is required to bring young trees into bearing. Trees set on suitable land, in good condition, cultivated, manured and well attended to, will be in condition in ten years to begin to bear considerably, and be a source of profit. Ten years is not a very long time to wait for a return for the money expended, and besides, he who plants an orchard, makes one of the best of investments for his children. It is a better investment than town or city bonds.

It is to be hoped that apple trees will be more extensively set the coming year than ever before, and that the farmers will cultivate the ground

where the trees are set till they are well established in bearing. It is of very little use to set trees and neglect them. It is of little use to set trees from rich nurseries in poor grass fields where they cannot find enough nourishment to keep them alive. Trees in cultivated ground, where they are well fertilized will grow twice as much as in grass ground where they find deficient nourishment. Maine can produce as fine apples as can be grown on the continent, and can compete with any section in raising them. The numerous manufacturing towns and cities within her borders, and the cities and towns in New England, afford a ready market for all the apples that can be produced within our State. Let the farmers take a new interest in the culture of the apple and engage extensively in it. It is one of the most important branches of farming, and might be made the most profitable of any.—*Lewiston Journal*.

LOCAL REPORT FROM CUMBERLAND COUNTY.

STANDISH, September 12, 1877.

Fruit raising in this town is increasing, and is the best paying interest in soil tilling operations with us. Every man owning land, varying from one acre to one hundred and more, raises more or less apples and other fruit. There are some splendid and extensive orchards, raising apples of unsurpassed variety and excellence. The two best and most extensive fruit raising establishments in town, and perhaps in the county, belong respectively to Mr. A. W. Marrett and Rev. T. Baker. Mr. Marrett often counts his bushels of splendid Baldwins, and other choice kinds, up to 3,000,—from which he gathers a handsome income. in Portland, only fifteen miles from where they reddened and ripened in the autumn sun. Mr. Baker's orchard is younger, and consequently not of so large present productive capacity, but yet yielding him handsome returns, and promising vastly increased installments for his labor and care at a near future day. Besides an old orchard of several hundred trees, he has somewhere about 400 young ones, vigorous and thrifty, which he has planted, grafted and cared for, from the seed-bed, since he came upon the place, twenty years ago. Two hundred of these young trees have been several years in bearing, and last year yielded a good income. The rest are nearly all grafted, and promising a rich return for all labor and care in a very few years. He has a farm of 114 acres, that defies competition for capabilities in hay, grain, corn, and fruit raising, besides pine timber and wood growth, handy and in large supply. Pears, grapes, and other small fruits flourish and ripen well on his place.

The caterpillars, so destructive to orchards in other parts of the State, have done us no harm in Standish. For some reason, perhaps past explanation, the fruit is this year less in amount than even the ordinary crop of the unproductive years, and not an eighth of what it was last year.—*Cor. Lewiston Journal*.

FRUIT GROWING IN MAINE.

The ably written articles on fruit culture which have appeared in the *Farmer* of late, have been read with deep interest. Much capital has been and is still being invested in this branch of farming, while the returns for a few years past have been rather slow and uncertain, and the present outlook is far from encouraging. While these failures are so frequent around us, we need the views of the most experienced orchardists in the State concerning the cause. Let us hear from them: whether they have made the business pay or otherwise; their notes of warning or encouragement will be valuable to those who desire instruction.

A glance at the orchards over the State shows that the business has been both overdone and but half done. If but one half the money paid out yearly for trees, could be expended for *good trees* only, of those varieties proved to be adapted to the locality where they are set, and receive the same attention and cost of culture that the whole are now receiving, large losses and disappointments would be avoided. Perhaps no State in the Union has a greater variety of soil than ours—portions being well fitted for orcharding, and others valueless for this purpose. One has only to contrast the size, vigor and productiveness of both apple and pear trees in the central and western parts of the State, with those in the northern and eastern, to see that the former localities are quite preferable. I recently measured two apple trees in Kittery, one of which gave eleven feet nine inches in circumference, three feet from the ground; the other twelve feet nine inches, five feet from the ground. These trees are estimated to be two hundred years old. The oldest inhabitant can remember them fifty years ago, when they were in full vigor. They are still bearing fruit, although their hollow trunks and decaying tops show that they will soon pass away. They evidently belong to a hardy race, and have been favored with a good soil and location. We need not expect the puny trees of the present day to attain to the size and age of these, but if we desire the best trees that can be grown, we should be more careful to select the hardy ones.

Starting an Orchard.—How shall I start an orchard? Shall I set seedlings or buy Western trees? These are questions often asked by young orchardists. My advice to every farmer is to raise his own trees as far as practicable, and set only the best. If he wants to propagate Baldwins or other tender varieties, he should not graft until the trees are well started in the orchard. Duchess of Oldenburg, Talman's Sweet, and other perfectly hardy varieties, may be safely worked in the nursery. I should judge three-fourths of the trees that have been set during the past twenty years, were raised out of the State, mostly in New York. Some are well grown, many are rather refuse, with small roots, cramped and ill-shaped tops, and they are often bruised in transporting. When two thousand dollars are paid out in one year for Western nursery stock by *one town* in Maine alone, we can but see the need of doing something to check this drain.

More Questions—Can we not raise trees here quite as well suited to our wants as to send so much money abroad for them? Is it not better for us to propagate more largely from some choice sorts, which have their origin in Maine, and are of known repute for hardiness and market value? Some of the most vigorous trees I have seen growing in the State were from seed dropped by the wayside and in pastures. The feeble condition and early decay of some orchards is doubtless owing to the weak or diseased stock from which the seed or graft is taken. * * * *

Pears—Chickens and Insects—Increasing attention is being paid to the cultivation of Pears, and in some places with good results. From some observations at home and in the western parts of the State, I find a larger percentage of pear trees are saved, and the entire failure of fruit is not so frequent as with apples. While visiting C. C. Barrett, of York, one of the most enterprising farmers in that section of the State, I was shown a lot of one hundred strong pear trees just set on soil well adapted to their needs—a strong, deep soil, inclining to clay loam. His eight to ten hundred young fowls among them were protecting them from the insect tribe. I will here ask if the borer has ever been known to damage apple trees where plenty of chickens have had access to them during the entire summer? I. Wells, of Kennebunkport, recently showed me a small orchard of smooth trees, where the soil had been effectually scratched over by his fowls being yarded under them. They had been set twenty-two years. He had gathered 10 1-2 bushels in one season from a single tree. Next to fowl, sheep are the best stock for pasturing in the orchard.

Seasonable Suggestions.—After exterminating the caterpillars, we anticipated about one-half a crop of apples this season, but must submit to almost an entire failure, many trees not having apples enough to pay for looking after; and the few which the swarms of insects have spared are often badly bitten. Early apples generally are doing better than late ones. Trees are making but a moderate growth, and are not looking vigorous generally. Care should be exercised in pruning trees now while in a feeble state; better wait until the tree recuperates and shows a healthier look, before amputating large limbs. With a sharp pruning knife in my pocket, while looking after or working alongside of my trees (most of which are in single rows by the fences), I can easily keep my trees clear of sprouts and useless wood, only using the saw occasionally. When I discover a vigorous sprout coming out below a diseased branch, I am careful to retain it, so as to make a healthy substitute for the old one. Again, a branch which shows symptoms of decay, may sometimes be saved by allowing just suckers enough to grow to keep up the circulation. With judicious pruning, I find the stump less inclined to “bleed” or turn dark and decay early than when pruned in the spring.—S. N. T., *Vassalboro’*, in the *Maine Farmer*.

MISCELLANEOUS PAPERS.

ON PRESERVING THE FERTILITY OF ORCHARDS BY SHEEP-
GRAZING.BY A. W. TINKHAM, NORTH MONMOUTH.

The fact that many have failed in trying to dress an orchard by pasturing it with sheep, is, I think, owing to an error in the start. They have fenced in their orchards and put in sheep enough to graze them close, and the orchards have gradually failed. Now it is evident that the trees should have all the nutritive properties of the soil on which they grow. The sheep rob the trees of just so much as it takes to supply them with all the elements of life, together with their fleeces and the growth of lambs. My mode of procedure is simply to have a large tract of pasture land connected with each orchard, in which I built a shed. The sheep will leave the most shady lawn and repair to the sheds for protection against winged insects, which are very obnoxious to them during the summer and part of the autumn. I can, therefore, tax as large an area for the benefit of the orchard as I please to enclose; and by using absorbents, such as dry muck, leaves from the forests, spent tan, or almost any fine vegetable substance, make a large amount of the very best of dressing for the orchard, which can be applied to such trees as the sheep desert, or to any favorite trees which it is desirable to dress highly. Spread about two bushels of this mixture around each tree, and from four quarts to half a bushel of wood ashes, according to the size of the tree. Mulch well with brakes, straw, leaves, hay, or best of all, potato tops. Kill borers and other insects, prune the trees carefully, and a good crop of apples will be as sure as a good yield of any other crop with high culture and good care.

RENOVATING AN ORCHARD.

BY "M." BRUNSWICK, (in Maine Farmer.)

In the discussions before the Maine Pomological Society, at their late meeting held at Winthrop, on the renovation of old orchards, I notice that no allusion is made to a method which has been adopted in this vicinity with good success; and I take the liberty by the permission of the editor of the *Farmer* (whose columns I sometimes fear I am taxing more than is beneficial to its readers), to give them the process which has renovated some of our old orchards.

In my neighborhood was an orchard which had been set for nearly one hundred years. The old farm on which it was located had not been cultivated for many years, and the only use made of it was for pasturage, and cutting hay on the low land. The old orchard on the place, yielded but very little of the poorest kind of native fruit, and the trees were full of dead limbs and moss. The land was purchased by a working farmer, who built him a house and commenced renovating the nearly exhausted land, most of which was a clay soil. The farm lying near the sea shore, he had facilities for obtaining sea dressing in abundance at small expense in labor, and that at a leisure season of the year. Around his old apple trees he spread a liberal coat of rock-weed, in the fall, and in the winter applied another coat of muscle mud, at the same season pruning off all the dead limbs, and also a large part of those still possessing a small share of vitality. In the spring the dressing was turned under by shallow plowing. During the following two years, these old trees threw out new and thrifty branches, a few of which were permitted to mature, and after growing two seasons they were of sufficient size to be grafted into, which was done with scions of choice varieties of fruit adapted to the locality. The old trees have formed new tops; the native bearing limbs were cut off the winter following the insertion of the scions, and for the last few years these trees have yielded a liberal supply of excellent fruit, and besides, the land yields a heavy crop of hay annually.

A CONTRIBUTION TO THE HISTORY OF ORCHARDING IN MAINE.

BY ALFRED SMITH, MONMOUTH.

A large portion of the pioneer settlers in Kennebec county were energetic, enterprising farmers, well skilled in agriculture, and were from Middleborough, Bridgewater and other towns in eastern and southern Massachusetts. They brought with them apple seeds selected from the hardiest and best fruit, and planted them in nurseries on moist, mellow shoal soil, at the foot of hills, a situation in which all trees grow with spreading roots, tap roots being unnecessary to draw a supply of water. Thus they were easily removed with all their long fibrous roots to higher land, suitable for orcharding.

I have the history, from tradition, of a small nursery, planted on a farm by the first settlers of Winthrop, nearly a century ago. About twenty years after (80 years ago) my father, Isaac Smith from Middleborough, Mass., bought the farm. All the seedling trees of this nursery had been carefully removed ten years before, a part of which had been planted on an acre and a half of good orchard land, near the house and barn, having an eastern cant. The balance of the trees were sold to various parties in town and planted on the beautiful hill-sides of Winthrop. The seed of those old orchards was selected from the very best eating and cooking apples, both sweet and sour or sub-acid—consequently the fruit was all very choice.

As like begets like, the orchards of Winthrop have originated and brought to the notice of the public, four as good, hardy autumn seedlings as can be found in the State, viz.: Winthrop Greening, Moses Wood, Smith's Favorite and Fairbanks apple; all of these should be more widely disseminated, especially the latter, and are far superior to any of the "Russian varieties grafted on crab stocks," which in my opinion is another humbug being practiced on the farmers of Maine. The Russian apples are handsome, which is their only good quality. They are coarse, and are in eating only about a week, save the Alexander, and are ripe at a time in

the fall when the markets are glutted with fruit of a far superior quality, like the Porter and Winthrop Greening, and the others above mentioned, and others to numerous to mention, that are as hardy and are in eating from six to eight weeks, thus rendering them profitable to the grower, market-man and consumer; while the limited demand for the Russians will render them unprofitable like the crab apple, other than for making into cider. Nurserymen of Maine should select their seed for growing seedlings from the hardiest varieties, like the Northern Spy, Talman's Sweet, Yellow Bellflower, and the Winthrop seedlings. All the above sorts are as hardy as the Russians or the crab apple.

The pioneer farmers of Winthrop and the State as well, were very little versed in the art of grafting or budding trees, and it was thought to require as much skill to set a scion and have it grow, as to amputate an arm or leg. Seventy or seventy-five years ago the fall fruit of those old orchards was made into cider, and the winter fruit carefully stored in the cellars till winter. Then these energetic farmers would load up their pungs in the winter, the day before, with a barrel of cider and the balance in apples, and start a little past midnight for Farmington and Wilton, facing the cold northwest, and arrive there about sunrise. The cider would sell at from \$6 to \$8 per barrel, and apples at one dollar per bushel in exchange for wheat at a dollar per bushel. They would get the wheat ground at the mill and return home the same day, and the next day deliver and sell it in Augusta and Hallowell for cash, or in exchange for goods.

About this time the brothers Charles and Benjamin Vaughan came from England and settled on a farm in the Kennebec valley, near the town of Hallowell, and being gentlemen of intelligence and much interested in orcharding and general agriculture, they brought apple seeds, as well as the pear, plum and the English cherry seeds, selected from the best fruit of England, and planted a large nursery on their farm, and budded and grafted many of the trees and taught others to graft and bud. Many of these trees were planted in

orchards in Winthrop and in the towns in the Kennebec valley. Undoubtedly the King Sweeting and many other good varieties had their origin from this source.

Now, then, we may all learn some lessons from the above facts and history, that may serve to teach us not to plant our nurseries with seeds from the pomace of refuse Baldwins and like tender sorts, but from the hardiest, best winter varieties, like the Northern Spy, Talman's Sweet, Yellow Bellflower, &c., and then, if properly grown and suitably planted in orchards, kept in garden culture and when large enough grafted or budded in the branches with hardy, annual, winter sorts, suitable for our markets and exportation, and annually fed with elements suitable for growth and fruit, we shall have success, and I think in no other way.

I will only add, that we might experiment with scions (taken from such nurseries as the above, grown from the best hardy winter sorts) and graft with the scions a few stocks in the tops of bearing trees whose fruit is not valuable, and thus perhaps obtain valuable winter seedlings adapted to this State and climate. The scions would dwarf and bear the second year after grafting.—*Originally published in the Maine Farmer.*

ESSAY ON FOREST CULTURE.

BY A. W. TINKHAM, NORTH MONMOUTH.

That the forests of the civilized world exert a powerful influence on the climate, the fertility of the soil, the wealth of the nations, the rain fall, and consequently on the health of the inhabitants, is not a controverted point; and that but little effort is made to restore them when destroyed, or protect those now remaining, is equally true.

We have but to refer to the history of ancient nations, to realize the direful effects attending the destruction of their forests. Liebig, the celebrated German chemist, is of the opinion that the decline of many of those nations is to be

attributed to their neglect of agriculture, and their wholesale destruction of the native forests.

The Barbary States, once a wooded country, and densely populated, are now almost treeless, with a sparse population. Tripoli once claimed over 500,000 inhabitants, but is now reduced to less than 50,000, while the climate, which was once like that of Tennessee, is now so hot that steamships passing near the coast are obliged to keep their decks constantly wet, to preserve the lives of their passengers; and no out of door labor can be performed between the hours of 9 A. M. and 5 P. M.

The Spanish Peninsula was also heavily wooded and densely populated, but since the destruction of its forests has been reduced to the condition of a fourth rate power.

Granada, once noted for the fertility of its soil, its gentle rains and perennial springs, with its noble forests of oak, and other valuable timber, has now become an arid desert from the same cause. This was the last place surrendered by the Moors, and when forced to leave their loved country for the sickly shores of Africa, they turned their faces in their evening prayers toward Granada, imploring heaven to restore to them their lovely land.

Persia, once the proud mistress of Western Asia, since the destruction of its heavy forests has been reduced to the verge of starvation.

The terrible famine now raging in China, is attributed to the destruction of her forests.

When Napoleon landed his 40,000 veterans on the Delta of Egypt, in 1799, he found scarcely a tree from Rosetta to the first cataract of the Nile. They planted trees around their camps, and when compelled by fate to leave the land of the Pharaohs, the trees still remained as monuments to their industry and taste. The rulers of the land profited by their example, and set out millions of trees, which have worked wonders in the climate; for, while seventy-five years ago it seldom rained in Egypt, the forests now condense the vapors of the atmosphere, and refreshing showers are not unfrequent,

gladdening the inhabitants and causing the waste places to "blossom as the rose."

But, while referring to other lands, let us not shut our eyes to the lamentable fact that our own country is beginning to suffer from the wholesale destruction of its forests.

The Ohio valley, once noted for its magnificent growth of deciduous trees, is now nearly denuded; its perennial springs have disappeared, and droughts are frequent and protracted. In some parts of Ohio, water has been carried three miles for culinary purposes; and the famous blue-grass region in Kentucky is not unfrequently deserted by cattle for want of water.

There are those who dispute the theory of analogy between the forests of a country and its rain-fall, and cite us to Ireland as a proof to the contrary, that being nearly a treeless country, and yet its rain-fall is immense; but this is no convincing proof; it is only an exception to the general law, and this is probably due to the fact that it lies in the track of the Gulf stream, which washes its shores with its tepid waves, and whose bosom is fanned by the prevailing southwest winds, highly charged with vapor, which condenses in passing over, thereby rendering it ever worthy of its appropriate name, "Emerald Isle of the Ocean."

But there are other reasons why we should care for our forests and plant new ones in waste places. It is a fact that the drain upon the forests of our country, is vastly in excess of their natural growth; the railroads alone require one million acres of wood and timber per year to keep them in running order; the ship builders, carriage makers, house carpenters and manufacturers of agricultural tools, consume a vast quantity, to say nothing of that used for fence building, and with the large amount used for fuel and wasted in clearing land, is enough to claim the attention of the most careless mind.

It is said that little, if any timber suitable for tools and carriage work, can be found west of the Missouri river.

The deciduous trees of California are not much better than the coniferous trees of New England. This should encourage

us to plant nut-bearing trees, and those of the ash family, suitable for the western market.

One cause of the decline in our ship building interests, is due to the destruction of our once noble forests of oak, pine, and hackmatack. Most of the timber now has to be procured from the Chesapeake, thereby greatly increasing the cost, and rendering it impossible to contend with the cheap iron tonnage of foreign powers.

In view of the above facts, I commenced planting a forest in 1871, taking ten acres of worn out land that had been cropped till it would not grass over. I ran a fence around it as a protection against cattle and sheep; I plowed about three acres in furrows, two abreast, and about six feet apart—planted with red oak acorns at the rate of about one bushel per acre. They sprouted and were coming up finely, when the crows discovered them and made a thorough sweep, taking every one. I then sowed it with the seeds of the common white cedar (*arbor-vitæ*). Being entirely ignorant of the mode of cultivating the tree, it was with me simply an experiment, as I did not know that any one had ever planted any of the seeds before. The next spring they came up finely, but being exposed to the scorching rays of the sun, seven-eighths of them perished; but there are enough left to grow, as I planted them very thickly. They should be sowed in the shade of grass or small bushes, to protect them from the scorching heat of the midsummer sun. The seeds are easily gathered, by holding an inverted umbrella under the tree and whipping the boughs with a rod.

I next planted two acres with the seeds of the white pine, in the same manner that I did the acorns, and they are doing well. The cones should be gathered about the 20th of September, and spread on hay-caps in an open loft; when dry they can be shaken out easily. If the gathering is delayed till the 10th of October, the seeds will have nearly all dropped out.

I did not feel like giving up to the crows, so I planted two acres more with acorns, in the following manner: I took a

bricklayer's trowel, made a perpendicular incision in the turf, dropped in the acorn and closed the aperture. They came up nicely, the crows were outwitted, and they now are doing well. In the centre was a worthless marsh. This I drained with considerable expense, and set out a row of trees on its western verge—cedar and hackmatack—so that the prevailing westerly winds will waft the seeds over its surface.

I would recommend the planting of hackmatack seeds on moist ground, as they are very hardy and of rapid growth, and are quite valuable for ship timber. They also bear transplanting well.

Nut-bearing trees, such as walnut, white oak, and many other kinds might be raised with profit. About thirty years ago, the venerable Rev. William A. Drew planted some nuts which he procured at a store in Augusta. They came up and are now comely trees, the observed of all observers, and stand as monuments to his skill and taste.

There is in the western part of the pleasant town of Wayne, a range of sand hills, as bare and desolate as the desert of Sahara, yet the old settlers say that less than a century ago they were covered with a beautiful growth of deciduous trees, (mostly beech) and when cleared they produced bountiful crops of the cereals, but as soon as the potash in the soil was exhausted, the winds commenced blowing it from the tops of the hills, covering the rich valleys below, and rendering them as sterile as the hill-tops. But it is believed that this wholesale destruction might be averted, and the barren district re-forested, by planting with the Carolina tar-pine, (common pitch pine) the seeds of which can be obtained in large quantities from Plymouth County, Mass., where they flourish well on land quite as barren as the sand hills above referred to.

APPENDIX.

TREASURER'S REPORT FOR THE YEAR 1877.

CHARLES S. POPE, TREASURER,

IN ACCOUNT WITH THE MAINE STATE POMOLOGICAL SOCIETY.

DR.

To cash in the treasury January 1, 1877	\$135 01
amount received from the State, bounty for 1876.....	500 00
“ “ for donated premiums of 1876	67 50
“ “ of life members	50 00
“ “ of annual members	61 00
“ “ from sale of tickets at annual exhibition.....	185 05
“ “ from sale of fruit at annual exhibition.....	1 35
“ “ for interest on permanent fund	21 00
“ “ on temporary loan.....	250 00
“ “ of James Vick for special premiums, 1877....	40 00
	<hr/> \$1,310 91

CR.

By paid on loan of 1876.....	\$275 00
“ interest on loans	19 37
“ orders of Executive Committee, drawn in 1877	396 81
“ orders of Executive Committee, prior to 1877.....	94 13
“ J. Vick's special premiums for 1877.....	40 00
“ on account of premiums of 1876... ..	318 25
By cash in treasury December 31, 1877	167 35
	<hr/> \$1,310 91

CHARLES S. POPE, *Treasurer.*

Report of the Executive Committee for the year 1877.

To the Members of the Maine State Pomological Society :

The Executive Committee hereby report that they have examined the account of the Treasurer, for the year ending December 31, 1877, and have found the same to be correctly stated and properly vouched.

They have drawn orders on the Treasurer during the year as follows :

For outstanding bills of 1876	\$29 43	
Expenses of Winter Meeting, 1877	42 74	
Binding annual reports for 1876	35 32	
Expenses of annual exhibition, 1877	361 40	
Miscellaneous expenses	31 28	
	<hr/>	\$500 17

The items of expenditure embraced in the orders drawn as above, are :

Bills of exhibition of 1876	\$18 89	
Postage and express bills	48 46	
Printing, binding and stationery	115 97	
Stenographic reports	20 00	
Labor and materials at annual exhibition	160 67	
Travelling expenses of officers	136 18	
	<hr/>	\$500 17

The officers have received no compensation except for actual expenses incurred in attending to the business of the Society.

The financial condition of the Society on the 31st day of December, 1877, was as follows :

ASSETS.

Cash in the treasury	\$167 35	
Amount due from the State for 1877	500 00	
Amount due for membership, to be deducted from premiums	20 00	
Accrued interest on permanent fund	5 25	
	<hr/>	
Amount available as resources	692 60	
Permanent fund, including \$50 due from the Society	470 00	
Property owned by the Society, estimated	100 00	
	<hr/>	
Total assets		\$1,262 60

LIABILITIES.

Amount due on temporary loans	\$390 00	
“ due to the permanent fund	50 00	
“ of orders drawn and unpaid	200 89	
“ of unpaid premiums	699 00	
	<hr/>	\$1,339 89

[Excess of liabilities over available resources \$647 29

Excess of liabilities over total assets 77 29]

By order of the Executive Committee.

GEORGE B. SAWYER, *Secretary.*

WINTHROP, March 1, 1878.

At a meeting of the Executive Committee held on the first day of March, 1878, upon the consideration of the foregoing reports it was found necessary and accordingly *ordered* that a pro rata deduction of fifty per cent. be made on the premiums awarded at the last annual exhibition, to meet in part the deficiency in the receipts to pay premiums and expenses, as provided in the regulations prefixed to the premium list; said deduction not to apply to the special premiums of James Vick, nor to any premiums amounting in the aggregate to less than two dollars to any one person.

Report of the Secretary on Correspondence and Exchanges.

The decease of Dr. Weston, formerly Corresponding Secretary, after the election of officers for the year 1877, left a vacancy in that office; and at a meeting of the Executive Committee held June 19, 1877, it was *ordered* that the Secretary act as Corresponding Secretary for the remainder of the year.

The correspondence of the Society, the larger part of which (relating to matters of business,) was always conducted by the Secretary, has been quite extensive, amounting to over 200 letters and postals received by myself during the year, and an equal or larger number sent, not including notices of meetings, circulars, premium lists, &c.; and it is hoped that this statement, in connection with the fact of my constant employment in other business, will serve to excuse or palliate any apparent negligence or omissions which may have occurred in replying to letters received.

I have, in accordance with the practice of former years, forwarded copies of our Report for 1876 to the secretaries of societies similar to our own in the United States and Canada, and to various public libraries, to the editors of the leading papers of this State and of the horticultural journals of the country, also to many distinguished horticulturists and official persons; the most of which have been duly acknowledged or noticed. And I have received in exchange or by gift, for the library of this Society, the following works, viz:

DEPARTMENT OF AGRICULTURE OF THE UNITED STATES. Annual Report for 1876.

MAINE. Report of the Secretary of the Board of Agriculture for 1876; from S. L. Boardman, Secretary, Augusta. Collections of the Maine Historical Society, 2d series, vol. 1; from the State Library.

MASSACHUSETTS. Transactions Mass. Horticultural Society for 1876. Part 2, and 1877, Part 1. From Robert Manning, Secretary, Salem.

RHODE ISLAND. Charter, Constitution, By-Laws, &c., R. I. Horticultural Society; also Rules and Premium List of the same for 1877. From T. K. Parker, Cor. Secretary.

NEW YORK. Proceedings of the Western New York Horticultural Society, 1877. From P. C. Reynolds, Secretary, Rochester.

NEW JERSEY. Proceedings of the N. J. State Horticultural Society, 1876 and 1877. From E. Williams, Secretary, Montclair.

PENNSYLVANIA. Report of the Pennsylvania Fruit Growers' Association, 1875. From W. P. Brinton, Cor. Secretary, Christiana.

DISTRICT OF COLUMBIA. Proceedings of the Potomac Fruit Growers' Association, July and September meetings, 1877. From Dr. J. E. Snodgrass, Secretary, Washington.

GEORGIA. Premium List of State Fair, Atlanta, 1877.

OHIO. Fourth, fifth, sixth, ninth and tenth annual reports of the Ohio State Horticultural Society. From M. B. Bateham, Secretary, Painesville. (Together with those previously received completing the set from the 4th to 10th, inclusive.)

MICHIGAN. Sixth annual report of the Secretary of the Michigan State Pomological Society, 1876; also Premium List of State Fair, 1877. From Prof. C. W. Garfield, Secretary, Lansing.

WISCONSIN. Transactions of the Wisconsin State Horticultural Society, 1877. From F. W. Case, Secretary, Madison.

INDIANA. Transactions of the Indiana Horticultural Society, 1876; also Premium List of State Fair, 1877. From W. H. Ragan, Secretary, Clayton.

MINNESOTA. Transactions of the Minnesota State Horticultural Society, 1876-7. From Prof. C. Y. Laey, Secretary, Minneapolis.

MISSOURI. Twelfth annual report of the State Board of Agriculture, for the year 1876, embracing the Proceedings of the State Horticultural Society and the report of Prof. C. V. Riley, State Entomologist, for the same year. From J. Monteith, Secretary, St. Louis.

NEBRASKA. Proceedings of the Nebraska State Horticultural Society for the years 1872 and 1877. From Daniel H. Wheeler, Secretary, Plattsmouth.

QUEBEC. Transactions and second report of the Fruit Committee of the Montreal Agricultural and Horticultural Society, 1876. From Henry S. Evans, Secretary and Treasurer, Montreal.

ONTARIO. Report of the Fruit Growers' Association of the Province of Ontario, for the year 1876, to which is appended the Transactions of the Entomological Society of the Province for the same year. From D. W. Beadle, Secretary, St. Catharines.

NOVA SCOTIA. General Regulations and Prize List of the Annual Provincial Agricultural Exhibition, 1877. From R. W. Starr, Esq.

Respectfully submitted.

GEO. B. SAWYER, *Secretary*.

Members of the Society.

INCLUDING ALL NAMES REGISTERED UP TO DATE OF PUBLICATION.

NOTE.—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full christian names where initials only are given.

LIFE MEMBERS.

Atherton, H. N.	Hallowell	Metcalf, M. J.	Monmouth
Atherton, W. P.	Hallowell	Moore, William G.	Monmouth
Atkins, Charles G.	Bucksport	Morton, Will. E.	Allen's Corner
Atwood, Fred.	Winterport	* Noyes, Albert.	Bangor
Carter, Otis L.	Étna	Pope, Charles S.	Manchester
Chase, Henry M.	North Yarmouth	Richardson, J. M.	Greene
Clark, Eliphalet.	Portland	Robinson, H. A.	Foxcroft
Crafts, Moses.	Auburn	Rolfe, Samuel.	Portland
Crosby, William C.	Bangor	Sawyer, Andrew S.	Cape Elizabeth
De Rocher, Peter.	Waterville	Sawyer, George B.	Wiscasset
Dirwanger, Joseph A.	Portland	Smith, Alfred.	Monmouth
Dyer, Milton.	Cape Elizabeth	Smith, Henry S.	Monmouth
Emerson, Albert.	Bangor	Starrett, L. F.	Warren
Farnsworth, B. B.	Portland	Stetson, Isaiah.	Bangor
Frost, Oscar F.	Monmouth	Strattard, Mrs. A. B.	Monroe
Gilbert, Z. A.	East Turner	Sweetser, S. R.	Cumberland Centre
Godfrey, John E.	Bangor	Taylor, Joseph.	Belgrade
Harlow, S. C.	Bangor	Thomas, William W. Jr.	Portland
* Harris, N. C.	Auburn	Tilton, William S.	Chelsea
Hersey, T. C.	Portland	Varney, James A.	North Vassalboro'
Ingalls, Henry.	Wiscasset	Vickery, James.	Portland
Jewett, George.	Portland	Wade, Patriek.	Portland
Low, Elijah.	Bangor	* Weston, James C.	Bangor
Low, S. S.	Bangor	Whitney, Edward K.	Harrison
McLaughlin, Henry.	Bangor	Woodman, George W.	Portland

ANNUAL MEMBERS.

Including only those who have paid dues for one or both of the years 1876 and 1877, or in advance for 1878; all others being dropped in pursuance of Art. 1, Sec. 4 of the By-Laws.

Abbott, H. G.	North Vassalboro'	Caffrey, J. P.	Waterville
Alden, Miss F. L.	Waterville	Carey, Francis.	Turner
Allen, Lorenzo L.	Monmouth	Carney, Franklin L.	Newcastle
Andrews, George H.	Monmouth	Carpenter, G. H.	Waterville
Andrews, O. W.	Monmouth	Carr, A. C.	Winthrop
Andrews, H. O.	New Haven, Conn.	Chamberlain, F. C.	Waterville
Ayer, Daniel.	North Vassalboro'	Clough, George M.	Monmouth
Bangs, I. S.	Waterville	Cole, S. H.	Lewiston
Berry Stephen.	Portland	Cook, Edward H.	North Vassalboro'
Bickford, Crowell.	Waterville	Cornforth, Hiram.	West Waterville
Blaney, Arnold.	Bristol	Crocker, S. S.	Warren
Boothby, L. T.	Waterville	Crowell, A.	Waterville
Boothby, W. A. R.	Waterville	Cumston, Charles M.	Monmouth
Bowman, Adrian.	Waterville	Dawes, S. H.	Harrison
Bowman, George F.	North Sidney	Dodge, Etta.	Waterville
Boynton, William H.	Monmouth	Dorr, George W.	Waterville
Bradford, Charles H.	Turner	Drummond, James.	Winslow
Bragdon, Charles B.	Monmouth	Drummond, E. R.	Waterville
Brewster, Henry M.	Curtis' Corner	Dudley, J. Colby.	Readfield Depot
Briggs, D. J.	South Turner	Dunbar, Lemuel.	Waterville
Britton, I. W.	Winslow	Eaton, Russell.	Augusta
Buffum, J. W.	North Vassalboro'	Edwards, Mrs. W. W.	Waterville
Burr, John.	Freeport	Ellis, A. H.	Fairfield Corner

* Deceased.

ANNUAL MEMBERS—CONCLUDED.

Emerson, John	Howland	Oak, Nathaniel.	Exeter
Fernald, Granville	Harrison	Parker, B. F.	Livermore Falls
Foster, M. C.	Waterville	Parker, Henry D.	Livermore Falls
Fuller, F. A.	East Winthrop	Pearson, William H.	Vassalboro'
Gardiner, Robert H.	Gardiner	Percival, H.	Waterville
Getchell, Ira E.	Winslow	Percival, Joseph.	Waterville
Getchell, M. A.	Winslow	Perkins, D. C.	Fairfield
Goding, John W.	Monmouth	Pike, A. L. F.	Norway
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Hanson, J. H.	Waterville	Pulsifer, D. W.	East Poland
Haskell, F. W.	Waterville	Randall, T. P.	East Auburn
Haskell, Aretas.	Pittsfield	Reynolds, John, Jr.	Clinton
Heald, P. S.	Waterville	Rice, Charles R.	Cooper's Mills
Heald, T. G.	Waterville	Robbins, C. S.	Winthrop
Hinckley, Oliver.	Monmouth	Robinson, David B.	Auburn
Hoffes, Elmas.	Warren	Runnels, Fred W.	Clinton
Hoxie, Galen.	North Fairfield	Sanderson, R.	Waterville
Hoxie, James S.	North Fairfield	Shepherd, R. W., Jr.	Montreal, P. Q.
Johnson, J. A.	Auburn	Simmons, H. J. A.	Waldoboro'
Jones, Charles H.	Warren	Simpson, A. L.	Bangor
Jones, Weymouth.	Winslow	Smiley, Joseph.	Vassalboro'
Lang, John W.	Brooks	Spaulding, Benjamin.	Augusta
Lasselle, John.	Waterville	Spaulding, Calvin.	Hallowell
Leighton, John L.	Dexter	Sprague, H. A.	Charlotte
Leland, S. R.	Farmington	Stanley, Charles.	Winthrop
Lennox, William P.	Wiscasset	Taber, Henry.	Vassalboro'
Marshall, Isaac N.	New Bedford, Mass	Taylor, J. M.	Vassalboro'
Marston, Daniel E.	Monmouth	Tilley, Henry.	Castle Hill
Marston, David.	Monmouth	Tinkham, A. W.	North Monmouth
Marston, S. C.	Waterville	Towne, J. E.	Waterville
Matthews, G. H.	Waterville	True, N. T.	Bethel
Matthews, John.	Waterville	Webb, E. F.	Waterville
McFadden, C. R.	Waterville	Webster, M. A.	West Stockbridge, Mass
Merrill, E. B.	Vassalboro'	White, Joseph.	North Vassalboro'
Muzzy, Horace.	Searsmont	Whittier, Silas T., Cornville, (P.O. Athens)	
Nowell, Frank E.	Fairfield	Winslow, J. N.	Portland
Nowell, J.	North Vassalboro'	Young, Edmund J., Aetons,	
Noyes, Edwin.	Waterville	(P. O. Horn's Mills, N. H.)	
Nye, Herbert E.	Fairfield		

SIXTH ANNUAL REPORT
OF THE
SECRETARY
OF
The Maine State Pomological Society
FOR THE YEAR
1878.



AUGUSTA:
E. F. PILLSBURY & CO., STATE PRINTERS.
1879.

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Maine State Pomological Society.

TRANSACTIONS FOR 1878.

For the first time since the organization of the Society, it becomes necessary to present the annual report of its transactions without the record of a Winter Meeting,—the one held at Winthrop in February 1878, being, in accordance with the usage of the Society, regarded as a part of the Transactions of the preceding year, and fully reported in the Report for 1877.

Arrangements were undertaken by the Executive Committee, and a place selected for holding such a meeting in the early part of 1879, but were defeated, by unavoidable circumstances, at too late a day to admit of the selection of another place. It is believed, however, that notwithstanding the omission, for a single year, of this important part of the Society's work, the interest of the members and of the public in the objects of our organization has continued without abatement.

For the reason given, the present report will be devoted mainly to the annual exhibition and the other details required by law.

With a single exception, the County reports provided for as stated in last year's proceedings, have not been presented to the Secretary. The want of the statistical and general information which these reports should furnish, (and which would give to the Society's Transactions a local interest in every part of the State), renders it impossible to give a satisfactory statement of the progress and practical results of the business of fruit culture in the State for the year.

It may be said, however, that the entire season was favorable, in all essential respects, to the production and development of all the varieties of fruit that ordinarily admit of profitable cultivation in the State; and the production was far in excess of the average of former years,—probably in excess of that of any former year. And while the cultivators enjoyed no immunity from the ordinary

obstacles and difficulties which attend this as well as all other employments, there was an entire freedom from those phenomenal disasters which sometimes destroy an entire crop and baffle the skill of the best cultivators.

THE SIXTH ANNUAL EXHIBITION

of the Society was held in the City Hall at Lewiston, on the 24th, 25th and 26th days of September 1878, and embraced the departments of fruit, flowers and vegetables. The total amount of premiums offered was \$751.00; and the amount awarded was \$171.25. Number of entries, 1,042. The classification of premiums and the rules governing the exhibition were substantially the same as those of the previous year, and proved to be generally satisfactory.

This being the first exhibition held by the Society in Androscoggin County, and at a place easy of access to the best fruit-growing regions of the State, and in a year of great productive-ness, justified the hope of an extensive and profitable exhibition. This hope was fully realized in the first respect named, and partially so in the second. There were among the exhibitors many new ones, both of large and small collections, who, though sometimes failing (as new exhibitors are apt to do.) in the observance of the strict rules which have been found essential to the success of such an exhibition, made most creditable exhibitions, and were gladly welcomed. The "veteran exhibitors" were also in attendance with collections of fruit, showing the good results of years of experience and study both as producers and exhibitors. There were also present as spectators and guests, a considerable number of the people of Lewiston and Auburn prominent in professional, literary and social life; but, as usual, the attendance of the general public was quite limited, and the receipts were barely sufficient to cover the expenses. The details of the receipts and expenditures will be found in the appended reports of the Treasurer and Executive Committee.

The exhibition of apples and pears was unquestionably the largest and best ever made by this or any other Society in the State. The grapes shown were generally excellent in quality, but not as abundant as at some former exhibitions. There was almost an entire absence of plums, (although the crop was abundant), owing to the fact that the exhibition was held too late to admit of

their being shown to advantage. Plants and flowers were exhibited in great variety and excellence, and the green-house plants, especially, were very fine. Of garden vegetables the specimens exhibited were very good, but not satisfactory in respect to the variety and number of entries.

Purposely avoiding any official comments on the comparative merits of the specimens exhibited in the several classes by the different competitors, we present in this connection some extracts from the reports and comments of the newspapers of the State, as preliminary to the usual detailed report of entries and awards.

From the Lewiston Journal.—Preliminary "Local" Report.

"At an early hour Tuesday morning the vicinity of City Hall gave signs of the advent of the annual fruit and flower event in Maine. The sixth annual exhibition of the Maine State Pomological Society opens at City Hall, Lewiston, this evening. All day long have the fruit growers and florists of Maine been trooping up the stairs of City Building, bearing in their hands the richest samples of the year's product. Such an immense variety and such excellent qualities of fruits of all kinds were never before assembled under one roof in the State of Maine. The ladies have been arranging the floral display in front of the platform, where there is a sight which will be especially grateful to every lover of flowers. The many long tables stretching through the hall are loaded with fruit and flowers in a great variety. The display of pears as well as of apples is very fine, while larger collections of grapes are not often seen.

There are displays from nearly every county in the State. Even Aroostook comes forward with a very creditable exhibit of winter fruit. Several Kennebec county exhibitors each show fifty varieties. Many new and valuable varieties of fruit are shown.

The society is doing a good service for fruit culture in Maine, and this is a service by no means too early rendered; and there is yet room not only for more orchards, but for better orchards in the State of Maine. Such meetings of fruit growers, and such exhibitions of products prove a healthy stimulus to the cause of the fruits and flowers.

Up to 4 o'clock, P. M., to-day, there had been 800 entries, considerably more than ever before at this time in the session. The exhibition will be open this evening and Wednesday and Thursday, day and evening. Of course there will be a large attendance to see this unrivalled floral and fruit display.

The display of apples is the largest ever made in the State, and as such, it is an honor to our fruit growers to have produced. All the standard and most valuable varieties are represented by remarkably large and excellent specimens. The display of pears is

very extensive and embraces a large number of varieties. Evidently pear culture in Maine is a success, and is rapidly increasing in importance." * * * *

From the Maine Farmer.

The annual show of fruits, flowers and vegetables at the Lewiston City Hall, made by this Society last week, was by far the best exhibition held by the Society since its formation five years ago. It was estimated to have been about twice as large in nearly every department as that held one year ago in Waterville. Being in the centre of a region noted for its natural advantages for fruit growing, and inhabited by a people possessing a high degree of intelligence, combined with cultivated tastes and rare skill in producing many things which minister to the comfort and delight of social life, it was no surprise to witness large collections, and a great variety of choice orchard and garden fruits contributed by the farmers of Lewiston and the towns surrounding. From the fact that the State Agricultural Fair had been held only one week before, and the excitement attending that event had in a great measure sated the curiosity of the thousands of people who were present at Portland from all parts of the State, the attendance upon the Pomological exhibition was comparatively light; yet it was evident from the manifestations of pleasure experienced by all who viewed this hitherto unequalled display of the fruits and other products of the skill of our people, that the Society has commenced a work, and has presented claims to the consideration of the citizens of the State, which will eventually receive an appreciative response, and be recognized as one of the most valuable and important agencies for promoting the industrial prosperity of the farming population, as well as educating the masses in a knowledge of the fine arts requisite for the complete development of the resources and capabilities of the soil.

The weather during the three days of the exhibition was very favorable, affording a fine opportunity to those who could, to witness this grand show; and the hundreds of people who devoted a few hours each to the examination of the splendid collection in the hall will retain for the remainder of their lives a vivid sense of the beauty and loveliness of this vast contribution to the cause of elevating the standard of horticultural progress. During the last day the children had permission to attend at a low rate of admission; and it was regretted that arrangements were not seasonably made for the convenient attendance en masse of the school children of Lewiston and Auburn, as well as the adjacent localities. The officers of the society were nearly all present, and from beginning to close, labored assiduously and disinterestedly for the success of the exhibition. * * * *

The display of apples, pears and grapes, whether in collections or as single specimens was creditable, and proved to all be-

holders that our farmers are striving for the attainment of the utmost excellence in the productions of these standard fruits. The practiced eye could easily detect the unfailing signs of careless culture or lack of taste in selection of varieties on some of the tables, though it is but just to say that very few such cases were noticed. When we heard young enthusiastic men discussing the proper conditions of successful fruit culture, and comparing various specimens, noting variations of form and color developed in various localities, under different circumstances, we concluded that pomological science was penetrating the minds of many who had formerly lived in listless indifference to the highest demands of the age as it relates to true pomology.

The list of premiums offered in the various classes and divisions aggregated nearly \$700, being much less than that of last year, yet sufficient to induce a lively competition among exhibitors, and although several counties were scarcely represented in the exhibition, there was but little available space left unfilled with plates of choice fruit or floral and vegetable contributions. The sections of the State best represented were Androscoggin, Cumberland, Oxford and Kennebec counties. York, Somerset, Penobscot and Lincoln were represented by several displays of great merit, and formed very distinguished features of the grand collection."

* * * * *

From the Piscataquis Observer.—[By J. R. B.]

"The Sixth Annual Exhibition of the Maine State Pomological Society, was held at City Hall, Lewiston, Sept. 24, 26. The display of fruit and flowers was the largest ever made in this State. 249 premiums were offered amounting to \$748.50 and some 1200 entries were made by exhibitors. The weather was favorable, but the attendance of visitors was much smaller than was to be desired. I am afraid the name is choking the association. When I asked people if they were going to the Pomological exhibition, the answer would be, "The *what?*" Then they would use me for a dictionary. But after a person has once walked among tables spread as for a banquet of the gods, and breathed the air perfumed by a thousand flowers, he loses his dread for this hybrid of Latin and Greek, and would come again next year if the name of the Society were twice as long.

Tuesday was the liveliest day, although the public was not admitted till evening. Like cob houses (and costlier ones, perhaps) a great fair gives most pleasure, not in the completed state, but in the preparation. The bustle of the morning, when bundles, boxes, barrels, and crates of every description are brought in and opened before your curious eyes, is not to be compared with the mummified state of things that follows. Though everybody is in a hurry, yet people are now, for the most part, pleasant and communicative. Each man believes that in his barrel lies

the particular apple or melon that is to make the owner famous. The women undo their funny budgets, and, in a knowing way, tell you that there is a *peculiar secret* about the production of this or that article. Soon, jealousy of some neighbor's collection, or dissatisfaction with the awards will drive the confident smile from many a face and freeze the current of their genial talk.

Nearly every county was represented—even Aroostook. As we pass among the tables we look anxiously for the Piscataquis exhibition, but in the place of fruit and flowers find only slate butter-boards. I presume our fruit growers are exhibiting at the county fair, but some one ought to have come to take the special premiums offered the inhabitants of the "gem county."

We pass by the collections of pears and grapes exhibited by sleek men from the cities. The specimens are large, to be sure, but what can we learn of practical value from these things that cost ten dollars apiece? This farmer, shining up his apples with a piece of red flannel suits us better.

This long table with its forty-five varieties of apples and ten different kinds of pears belongs to Mr. Joseph Taylor of Belgrade. Mr. Taylor evidently knows how to raise fruit of the right sort, for it not only shows well at a fair, but has preserved its owner to a cheerful old age. He has been orcharding for twenty-five years, and, therefore, is not likely to advocate expensive or new-fangled notions. His soil is of the slate formation, and his orchard contains some three hundred trees. He buys very few New York trees—just enough to graft those of his own raising. He says it is impossible to raise a crop of grain and another of apples from the same ground. Hence he mulches the ground under his trees as far from the trunk as the branches extend. Potatoes are the worst crop to have among trees. For profit it is best to stick to a few standard kinds; but, in order to have delicious fruit at home during the whole year, we must draw upon a large variety. One of the best paying kinds is the Early Red, which he says comes into the market in advance of everything else.

Mr. Taylor's table brings us to the end of the hall. Here the ladies are making a fine display of cut flowers. These, my dear reader, looked just like the flowers that grow in our own gardens, so I will not describe them. This lady, however, who is so hard at work, and whose display secured the twenty dollar premium, told me things that are worth remembering. A fair is valuable not for what one can see, but for what can be learned.

The display of everlasting flowers was interesting—one lady presenting as many as twenty varieties. Why these beautiful and unfading flowers are not more generally cultivated is a mystery. The bouquets made from them will retain their brightness for three years. Two beautiful ones were made as follows: Form a cone by bending wire into the shape of a circle for the base; to the base fasten wires and bring them together at the top, like the ribs of an umbrella; cover this framework with cambric and sew

on the flowers interspersed with frosted grass and bits of evergreen. The grass is prepared by dipping in a hot solution of alum (one pound to a quart of water). The grass should be frequently stirred while in the solution to prevent the formation of crystals. The moss is first dipped in alum water and then colored a bright green with aniline.

A very large boquet of dahlias was formed on a frame, like the above, but apple-tree boughs were used in the place of wire. A pretty wall boquet (flat) was arranged on a spruce branch. A premium boquet of asters was made by standing the stalks in a large dish filled with earth. This will keep them fresh nearly a week.

As I came out of the hall I was so enthusiastic over plants and flowers that I procured an illustrated seed catalogue and read it all through before dinner. If you need inspiration go to the next horticultural exhibition."

THE DETAILS OF THE EXHIBITION

will appear by the following statement, in which are given, the premiums offered, the special conditions affixed, the entries, and the premiums awarded.

[NOTE—The names of the persons to whom premiums were awarded are given first under each specification, with the amount awarded, and afterwards the names of other competitors for the same. When the name of a person is repeated the place of residence is omitted.]

CLASS 1.—*Apples.*

FIRST DIVISION.

Conditions—"Entries for all premiums in this division must consist of five specimens of each variety exhibited, and (except Nos. 19 and 20) of at least twenty named varieties. Entries for premiums Nos. 1, 19, and 20 must be separate and distinct collections, not embracing any other collection or specimens.

Collections entered for premiums Nos. 2 to 17 may also be entered for No. 18, but in any such case only one premium will be awarded for one collection."

No. 1 For the best general collection of apples grown exclusively within the limits of either county in this State, but not necessarily grown by the exhibitor. Not more than one premium to be awarded to any one county, and no change or combination of entries between different exhibitors to be made after the fruit is brought into the hall.

Pulsifer Bros., Poland, (Androscoggin county,) first premium, \$15.00; Atherton Bros., Hallowell, (Kennebec county,) second premium, 10.00; Granville Fernald, Harrison, (Cumberland county,) third premium, \$5.00.

2. For the best general exhibition of apples, grown by the exhibitor, in Androscoggin county: James Chipman, Poland, \$5.00; Pulsifer Bros., \$3.00; Z. A. Gilbert, East Turner.

3. For the same in Aroostook county. (No entry.)

4. For the same in Cumberland county. Henry M. Chase, North Yarmouth, \$5.00.

5. For the same in Franklin county. (No entry.)

6. For the same in Hancock county. (No entry.)

7. For the same in Kennebec county. Alfred Smith, Monmouth, \$5.00; Atherton Bros., \$3.00; Joseph Taylor, Belgrade; Daniel Ayer, North Vassalboro'; R. H. Gardiner, Gardiner.

8. For the same in Knox county. (No entry.)

9. For the same in Lincoln county. Henry Ingalls, Wiscasset, \$5.00; Geo. B. Sawyer, Wiscasset, \$3.00.

10. For the same in Oxford county. J. J. Towle, South Carthage, \$5.00.

11. For the same in Penobscot county. S. C. Harlow, Bangor, \$5.00.

12. For the same in Piscataquis county. (No entry.)

13. For the same in Sagadahoc county. (No entry.)

14. For the same in Somerset county. James S. Hoxie, North Fairfield, \$5.00; Silas T. Whittier, Cornville, \$3.00.

15. For the same in Waldo county. (No entry.)

16. For the same in Washington county. (No entry.)

17. For the same in York county. John Hanscom, Saco, \$5.00.

18. For the best general exhibition of apples, grown by the exhibitor. Joseph Taylor, \$15.00; R. H. Gardiner, \$10.00; Z. A. Gilbert, \$5.00; Alfred Smith, G. B. Sawyer, Henry Ingalls, James Chipman, James S. Hoxie, J. J. Towle, Henry M. Chase, Daniel Ayer, Silas T. Whittier, Atherton Bros., Pulsifer Bros., John Hanscom, S. C. Harlow.

19. For the best five named varieties of fall apples. A. B. Chipman & Son, Poland, \$3; Charles S. Pope, \$2; Francis Carey, Turner, \$1; Alfred Smith, Joseph Taylor, Edward K. Whitney, Henry M. Chase, R. H. Gardiner, S. C. Harlow.

20. For the best five named varieties of winter apples. R. H. Gardiner, \$3; Milton Dyer, \$2; S. R. Sweetser, \$1; Alfred Smith, Geo. B. Sawyer, Charles S. Pope, Joseph Taylor, Francis Carey, A. B. Chipman & Sons, Edward K. Whitney, F. M. Woodward, Pulsifer Bros., S. C. Harlow, John Hanscom.

SECOND DIVISION.

"Entries for premiums in this division must consist of *ten* specimens of each variety exhibited, and must be separate specimens from any exhibited in the first division."

21. For best single variety of autumn apples. Z. A. Gilbert, \$2; Geo. B. Sawyer, \$1; Alfred Smith, Z. A. Gilbert, C. H. Bradford, Joseph Taylor, F. M. Woodward, E. K. Whitney, Milton Dyer, Daniel Ayer, R. H. Gardiner, Atherton Bros., S. C. Harlow, John Hanscom, S. R. Sweetzer, Pulsifer Bros.

22. For the best single variety of winter apples. E. K. Whitney, \$2; S. R. Sweetzer, \$1; Alfred Smith, Geo. B. Sawyer, Joseph Taylor, Daniel Ayer, R. H. Gardiner, Atherton Bros.

23. For the best dish of Alexander. S. C. Harlow, \$1; C. Bradford, 50c.; Henry Ingalls, Henry Tilley.

24. American Golden Russets. Henry Ingalls, \$1; G. B. Sawyer, Samuel Guild, Augusta, R. H. Gardiner, Pulsifer Bros., H. McLaughlin.

25. Baldwin. Pulsifer Bros., \$1; Charles S. Pope, 50c.; Alfred Smith, L. K. Litchfield, Z. A. Gilbert, Henry M. Chase, Joseph Taylor, F. M. Woodward, L. H. Blossom, Turner; D. J. Briggs, David Marston, Monmouth; Geo. W. Fogg, Monmouth; A. B. Chipman & Sons, David Farrar, Lewiston; E. K. Whitney, Geo. H. Andrews, Geo. M. Clough, Monmouth; Daniel Ayer, R. H. Gardiner, Moses Crafts, Auburn; John Hanscom, S. R. Sweetzer, Granville Fernald.

26. Benoni. S. R. Sweetzer, \$1; L. K. Litchfield, 50c.; Henry Ingalls, R. H. Gardiner.

27. Black Oxford. S. R. Leland, Farmington, \$1; Pulsifer Bros., 50c.; Alfred Smith, L. K. Litchfield, L. H. Blossom, D. J. Briggs, J. J. Towle, Geo. W. Fogg, A. B. Chipman & Sons, G. H. Andrews, Silas T. Whittier, Eli Hodgkins, Greene; J. L. Howe, Greene; Granville Fernald.

28. Blue Pearmain. R. H. Gardiner, \$1; Moses Crafts, 50c.; Alfred Smith, L. K. Litchfield, Joseph Taylor, J. S. Hoxie, Francis Carey, David Marston, A. B. Chipman & Sons, S. R. Leland, G. M. Clough, Horace True, Eli Hodgkins, Isaac Pulsifer, J. L. Leighton, Garland.

29. Briggs' Auburn. (No entry.)

30. Cole's Quince. (No entry.)

31. Danvers Winter Sweet. Walter E. Blanchard, \$1; Henry Ingalls, 50c.; Geo. B. Sawyer, Joseph Taylor, S. C. Harlow.

32. Dean. (Nine Ounce.) S. R. Leland, \$1; J. L. Leighton, 50c.; Joseph Taylor, A. S. Sweetser.

33. Duchess of Oldenburgh. Henry Tilley, \$1; S. R. Sweetser, 50c.; J. J. Towle, Moses Crafts.

34. Early Harvest. S. C. Harlow, 50c.; Alfred Smith, Pulsifer Bros.

35. Early Strawberry. Henry Ingalls, James Chipman, R. H. Gardiner.

36. English Russet. Alfred Smith, G. B. Sawyer, Granville Fernald.

37. English Russet. D. J. Briggs, \$1; T. C. Woodward, 50c.; Alfred Smith, A. E. Bradford.

38. Fall Harvey. Z. A. Gilbert, \$1; F. M. Woodward, 50c. Alfred Smith, James Chipman, R. H. Gardiner.

39. Fameuse. Eli Hodgkins, \$1; A. E. Bradford, 50c.; Alfred Smith, Geo. B. Sawyer, James Chipman, H. Tilley, A. B. Chipman & Sons, D. Farrar, S. T. Whittier, R. H. Gardiner, Atherton Bros. Leonard Littlefield, Poland; John Hanscom, H. McLaughlin.

40. Franklin Sweet. Z. A. Gilbert, \$1; J. L. Howe, 50c.; Alfred Smith, L. K. Litchfield, Joseph Taylor, David Marston.

41. Garden Royal. E. K. Whitney, \$1; J. J. Towle, 50c.

42. Gravenstein. S. R. Sweetser, \$1; F. M. Woodward, 50c.; Alfred Smith, Henry Ingalls, Joseph Taylor, A. B. Chipman & Sons, E. K. Whitney, J. H. Miller, R. H. Gardiner, N. H. Burnham, Harrison.

43. Hightop Sweet. L. H. Blossom, \$1; Z. C. Woodward, Z. A. Gilbert, S. M. Newell, Greene; S. C. Harlow.

44. Hubbardston Nonsuch. Joseph Taylor, \$1; S. R. Sweetser, 50c.; Alfred Smith, Z. A. Gilbert, Henry Ingalls, Samuel Guild, F. M. Woodward, J. J. Towle, David Marston, D. Farrar, Daniel Ayer, R. H. Gardiner, Atherton Bros., Pulsifer Bros., John Hanscom, Charles Paine, J. L. Leighton.

45. Hurlbut. Walter E. Blanchard, \$1.

46. Jewett's Fine Red. John Wilson, \$1; Alfred Smith, 50c.; Henry Ingalls, H. M. Chase, Joseph Taylor, James S. Hoxie, S. R. Leland, James Chipman, E. K. Whitney, Moses Crafts, Pulsifer Bros., J. L. Leighton.

47. King of Tompkins County. A. D. Pulsifer, \$1; S. R. Sweetser, 50c.; Alfred Smith, Geo. B. Sawyer, Henry Ingalls, Samuel Guild, James Chipman, Joseph Taylor, F. M. Woodward, D. J. Briggs, A. B. Chipman & Sons, D. Farrar, Daniel Ayer, John Hanscom, S. H. Daves, Harrison.

48. King Sweeting. S. T. Whittier, \$1; Joseph Taylor, 50c.; Alfred Smith.

49. Large Yellow Bough. S. W. Shaw, Minot, \$1; R. H. Gardiner, 50c.; Alfred Smith, Milton Dyer, Pulsifer Bros.

50. Minister. John L. Leighton, \$1; Henry Ingalls, 50c.

51. Moses Wood. Joseph Taylor, \$1; S. T. Whittier, 50c.; Alfred Smith.

52. Mother. G. H. Andrews, \$1; H. M. Chase, 50c.; Henry Ingalls, Charles S. Pope, F. M. Woodward, G. W. Fogg, Eli Hodgkins, S. M. Rideout.

53. Naked Limb Greening. H. M. Chase, G. M. Clough.

54. Northern Spy. S. R. Sweetser, \$1; D. Farrar, 50c.; Alfred Smith, L. K. Litchfield, Samuel Guild, H. M. Chase, Joseph Taylor, F. M. Woodward, S. R. Leland, Z. C. Woodward, James Chipman, A. B. Chipman & Son, A. Ross, Auburn, Daniel Ayer, R. H. Gardiner, Heber Kimball, Harrison; J. L. Leighton.

55. Orange Sweet. Z. A. Gilbert, \$1.

56. Pomme Royal. Charles S. Pope, \$1.
57. Porter Walter E. Blanchard, \$1; Pulsifer Bros. 50c.; Alfred Smith, Geo. B. Sawyer, Henry Ingalls, H. M. Chase, G. W. Shaw, Francis Carey, Joseph Taylor, G. W. Fogg, Milton Dyer, E. K. Whitney, R. H. Gardiner, Samuel Guild, J. L. Leighton.
58. President. B. E. Allen, Greene, \$1; A. J. Nash, 50c.; Francis Carey.
59. Primate. (No entry.)
60. Pumpkin Sweet. J. L. Leighton, \$1; Z. A. Gilbert, 50c.; Alfred Smith, H. M. Chase, Z. C. Woodward, G. M. Clough, A. Ross, Horace True, So. Turner, R. H. Gardiner, Charles Paine, Harrison.
61. Red Astrachan. (No entry.)
62. Charles S. Pope, \$1; Samuel Guild, 50c.; Alfred Smith, James Chipman, J. J. Towle, R. H. Gardiner, Atherton Bros.; Pulsifer Bros., Walter E. Blanchard.
63. Rhode Island Greening. S. R. Sweetser, \$1; S. H. Dawes, Harrison, 50c.; Alfred Smith, L. K. Litchfield, G. B. Sawyer, Z. A. Gilbert, Henry Ingalls, H. M. Chase, L. H. Blossom, D. J. Briggs, Joseph Taylor, D. Marston, G. W. Fogg, G. H. Andrews, Daniel Ayer, A. Ross, R. H. Gardiner, Moses Crafts, Eli Hodgkins, Atherton Bros., Pulsifer Bros. G. Fernald.
64. Rolfe. (No entry.)
65. Roxbury Russet. Atherton Bros., \$1; Moses Crafts, 50c.; Alfred Smith, L. K. Litchfield, G. B. Sawyer, James Chipman, F. M. Woodward, L. H. Blossom, Francis Carey, D. J. Briggs, A. W. Tinkham, Joseph Taylor, David Marston, G. W. Fogg, G. M. Clough, E. K. Whitney, G. H. Andrews, Daniel Ayer, R. H. Gardiner, Pulsifer Bros., Granville Fernald.
66. Sops of Wine. S. C. Harlow, \$1; Alfred Smith, 50c.; Joseph Taylor, S. T. Whittier.
67. Somerset. Samuel Guild, \$1; Joseph Taylor, 50c.; Joseph L. Metcalf, H. McLaughlin.
68. Starkey. T. C. Woodward, 50c.
69. Tallman's Sweet. S. R. Sweetser, \$1; Z. C. Woodward, 50c.; Alfred Smith, L. K. Litchfield, Charles S. Pope, H. Tilley, D. J. Briggs, A. B. Chipman & Sons, D. Farrar, Daniel Ayer, R. H. Gardiner, Atherton Bros., Pulsifer Bros., S. C. Harlow.
70. Tetofsky. (No entry.)
71. Wagener. G. W. Fogg, \$1; Daniel Ayer, 50c.; Henry Ingalls, D. J. Briggs, A. Ross, Granville Fernald.
72. Williams' Favorite. J. J. Towle, \$1; Alfred Smith, James S. Hoxie, Joseph Taylor, R. H. Gardiner.
73. Winthrop Greening. A. W. Tinkham, \$1; Z. A. Gilbert, 50c.; Alfred Smith, L. K. Litchfield, Francis Carey, Joseph Taylor, D. Marston, G. W. Fogg, A. B. Chipman & Sons, Geo. H. Andrews, Horace True, R. H. Gardiner, Atherton Bros.

74. Yellow Bellflower. T. Blanchard, \$1 ; H. Winslow, 50c ; Alfred Smith, L. K. Litchfield, C. H. Bradford, James Chipman, Francis Carey, D. J. Briggs, A. B. Chipman & Sons, G. H. Andrews, G. M. Clough, R. H. Gardiner, Eli Hodgkins, John Hanscom.

75. Crab apples. A. Ross, \$1 ; A. E. Bradford, 50c. ; L. K. Litchfield, G. B. Sawyer, Joseph L. Metcalf, Joseph Taylor, Milton Dyer, Z. C. Woodward, J. H. Miller, S. T. Whittier.

76. For the best collection crab apples. Moses Crafts.

Sundries. L. K. Litchfield, Ribston Pippin ; Twenty Ounce, Pound Sweet, Martin Sweet, Pomme Grise, Spitzenburgh, Sloeum Russet, River or Vaughn, Seedling. Z. A. Gilbert, Milding ; C. H. Bradford, Ribston Pippin ; Samuel Guild, Winter White, Granite Beauty, Rockwood, Spice Sweet ; H. M. Chase, Cathead ; F. M. Woodward, Ramsdell Red Sweet, Ladies Sweet ; C. S. Pope, Peck's Pleasant ; S. W. Shaw, Red Russet ; Geo. M. Clough, Milding ; D. J. Briggs, Fall Jennetting, Gloria Mundi, Colvert, Garden apple ; A. W. Tinkham, Jerrey Brown, Unknown ; David Marston, Gloria Mundi ; G. W. Fogg, Ben Davis ; A. B. Chipman & Sons, Twenty Ounce, Golden Ball, N. Y. Stripe, N. Y. Russet, Newtown Pippin, August Sweet, Yeaton Sweet, Snowball, American Golden Pippin, Pound Sweet, Red Stripe, and several seedlings and unknown varieties ; D. Farrar, Fall Jennetting, Beauty of Kent ; Z. C. Woodward, Fall Jennetting, Newtown Pippin, Ribston Pippin, Pound Sweet, Grimes Golden, Fall Greening ; James Chipman, Beauty of Kent ; E. K. Whitney, Bloomfield, Black Gilliflower, August Sweet ; G. H. Andrews, Fairbanks, Pound Sweet ; J. H. Miller, N. Y. Russet ; A. Ross, Fall Pippin, Ben Davis ; Horace True, Allen's Sweet, Cracker ; R. H. Gardiner, Fall Pippin, Fairbanks, Gloria Mandi, N. Y. Russet, Red Winter Pearmain, Winter Pearmain, Wine Apple, Ribston Pippin, Jersey Sweet, and three varieties unknown ; Eli Hodgkins, Seedling, Fallawater, Gilliflower ; Moses Crafts, Sweet Russet, Maiden's Blush ; Z. A. Gilbert, Orange apple, Garden apple ; J. L. Howe, Greene, Mountain Sweet, Gloria Mandi ; S. M. Rose, Greene, Mountain Sweet ; John Hanscom, Bottle Greening, Granite Beauty ; H. McLaughlin, Northern Sweet, Ramsdell's Red ; Heber Kimball, Harrison, Colvert ; A. S. Sweetser, Ramsdell's Red ; John Wilson, Cumberland, Pound Sweet ; S. R. Sweetser, Blanchard ; Graaiville Fernald, Peck's Pleasant ; J. L. Leighton, French Pearmain ; Atherton Bros., Dominic, Sweet Nonsuch.

CLASS 2.—Pears.

Entries for premiums Nos. 77, 78, and 79, were required to consist of five specimens of each variety exhibited, and Nos. 80 to 103, inclusive, of ten specimens of each variety.

77. For the best general exhibition of pears. Samuel Rolfe, Portland, \$12; Geo. W. Woodman, Portland, \$8; Henry Ingalls, \$5; Alfred Smith, G. B. Sawyer, Dr. A. Garcelon, Lewiston; Joseph Taylor.

78. For the best five named varieties of Autumn pears. Alfred Smith, \$3; E. K. Whitney, \$2; Joseph Taylor, Geo. B. Sawyer.

79. For the best five named varieties of Winter pears. (Not awarded). Joseph Taylor, Alfred Smith.

80. For the best single variety of fall pears. Atherton Bros., \$2; Granville Fernald, \$1; Alfred Smith; Geo. B. Sawyer; H. McLaughlin; Joseph Taylor.

81. For the best single variety of Winter pears. Geo. B. Sawyer, \$2; Joseph Taylor, \$1; Alfred Smith, H. McLaughlin, E. K. Whitney.

82. For the best dish of Bartlett pears. L. J. Perkins, \$1; Granville Fernald, 50c.; Alfred Smith, L. K. Litchfield, Henry Ingalls, J. G. Coburn, H. M. Chase, Geo. H. Andrews, Atherton Bros., H. McLaughlin, Joseph Taylor.

83. Bell Lucrative. Geo. W. Woodman, \$1; H. McLaughlin, 50c.; E. K. Whitney.

84. Beurre d'Anjou. H. McLaughlin, \$1; Henry Ingalls, 50c.; Alfred Smith, L. K. Litchfield, Geo. W. Woodman, J. G. Coburn.

85. Beurre Bosc. (No entry.)

86. Beurre Hardy. H. McLaughlin, \$1; R. H. Gardiner, 50c.; Henry Ingalls.

87. Beurre Superfine. Henry Ingalls, \$1; S. W. Dawes, Harrison; H. McLaughlin.

88. Beurre Clairgeau. Geo. W. Woodman, \$1; Henry Ingalls, 50c.; Geo. B. Sawyer.

89. Beurre Diel. D. J. Briggs, \$1; Geo. B. Sawyer, 50c.; J. G. Coburn.

90. Buffum. Alfred Woodman, Portland, \$1; L. J. Perkins, 50c.; Alfred Smith, Geo. B. Sawyer, Henry Ingalls, H. McLaughlin, A. B. Chipman & Sons, E. K. Whitney, Granville Fernald.

91. Clapp's Favorite. (Not awarded.) Alfred Smith, J. G. Coburn, D. Farrar.

92. Doyenne Boussock. Geo. W. Woodman, \$1; L. J. Perkins, 50c.; Henry Ingalls, J. G. Coburn, Geo. H. Andrews.

93. Duchess d'Angouleme. S. H. Dawes, \$1; A. B. Chipman & Sons, 50c.; Alfred Smith, G. B. Sawyer, J. G. Coburn.

94. Flemish Beauty. S. H. Dawes, \$1; D. Farrar, 50c.; Alfred Smith, G. B. Sawyer, J. G. Coburn, H. McLaughlin, Geo. W. Fogg, E. K. Whitney, R. H. Gardiner, S. C. Harlow.

95. Fulton. H. McLaughlin, \$1; L. J. Perkins, 50c.

96. Glout Morceau. L. K. Litchfield, \$1; H. McLaughlin, Alfred Smith, S. W. Shaw.

97. Goodale. Geo. W. Woodman, \$1; Samuel Guild, 50c.; G. B. Sawyer, Henry Ingalls, H. McLaughlin.

98. Howell. Geo. W. Woodman, \$1; H. McLaughlin, 50c.; Alfred Smith, Geo. B. Sawyer, L. J. Perkins, E. K. Whitney, Granville Fernald, L. K. Litchfield.

99. Josephine de Malines. (No entry.)

100. Lawrence. Geo. W. Woodman, \$1; J. G. Coburn, 50c.; Geo. B. Sawyer, Henry Ingalls, Joseph Taylor, E. K. Whitney.

101. Louise Bonne de Jersey. L. J. Perkins, \$1; Alfred Smith, 50c.; G. B. Sawyer, Henry Ingalls, Arthur Woodman, Geo. W. Woodman, J. G. Coburn, J. L. Howe, H. McLaughlin, Z. C. Woodward, J. H. Miller, A. B. Chipman & Sons, S. H. Dawes, Granville Fernald.

102. Maria Louise. Alfred Smith, \$1.

103. Seckel. H. McLaughlin, \$1; L. J. Perkins, 50c.; G. B. Sawyer, Geo. W. Woodman.

104. Sheldon. Henry Ingalls, \$1; H. McLaughlin, 50c.; J. H. Miller, Jos. Taylor, L. J. Perkins, S. C. Harlow.

105. Swan's Orange. (No entry.)

106. Urbaniste. H. McLaughlin, \$1.

107. Vicar of Winkfield. J. G. Coburn, \$1; Geo. M. Clough, 50c.; Alfred Smith, Henry Ingalls, J. H. Miller, A. B. Chipman & Sons, L. J. Perkins, Granville Fernald.

108. Winter Nelis. H. McLaughlin, \$1; R. H. Gardiner, 50c.; Henry Ingalls, Geo. W. Woodman, J. G. Coburn.

Sundries. L. K. Litchfield, Nickerson; Samuel Guild, Nickerson; J. G. Coburn, Onondaga, St. Michael, Beurre de Amalis; H. McLaughlin, Stubbs Seedling, Indian Queen, Hemenway, A. B. Chipman & Sons, Osborn's Summer; L. J. Perkins, Beurre Napoleon; R. H. Gardiner, Napoleon; Atherton Bros., Beurre d'Amalis; Granville Fernald, Oswego Beurre.

CLASS 3.—*Grapes.*

109. For the best exhibition of foreign grapes, grown with fire heat. John Vickery, Auburn, \$5.

110. For the best exhibition of foreign grapes, grown in cold grapery. Geo. B. Sawyer, \$8; John Burr, Freeport, \$5; Henry Ingalls, \$3.

111. For the best cluster of Black Hamburg. G. B. Sawyer, \$1; John Vickery, 50c.; John Burr.

112. Wilmot's Hamburg. (No entry.)

113. Victoria Hamburg. John Burr, \$1.

114. White Frontignan. (No entry.)

115. Grizzly Frontignan. John Burr, 50c.

116. White Muscat. G. B. Sawyer, \$1.

117. White Chasselas. G. B. Sawyer, \$1; John Burr, 50c.

118. Lady Downes. (No entry.)

119. Buchland Sweetwater. Henry Ingalls, \$1.

120. Trentham Black. Henry Ingalls, \$1.

121. Wests St. Peters. (No entry.)

122. White Nice. (No entry.)
123. Red Chasselas. G. B. Sawyer, \$1; John Vickery.
124. Chasselas Musque. G. B. Sawyer, \$1.
125. For the best collection of native grapes, (open air.) G. B. Sawyer, \$8; Henry McLaughlin, \$5; E. K. Whitney, \$3, Alfred Smith, Geo. H. Andrews, James S. Hoxie, No. Fairfield, Dr. A. Garcelon, Lewiston; S. C. Harlow.
126. For the best single variety, open air, three bunches. Alfred Smith, \$1; E. K. Whitney, H. McLaughlin, S. C. Harlow.
127. For the best three bunches Deleware. James S. Hoxie, \$1; S. H. Dawes, 50c.; Alfred Smith, G. B. Sawyer, Henry Ingalls, James Vickery, G. H. Andrews, G. M. Clough, D. J. Briggs, E. K. Whitney, R. H. Gardiner, H. McLaughlin.
128. Concord. James S. Hoxie, \$1; D. J. Briggs, 50c.; Alfred Smith, L. K. Litchfield, G. B. Sawyer, James Chipman, James Vickery, E. K. Whitney, R. H. Gardiner, S. H. Dawes.
129. Hartford Prolific. James S. Hoxie, \$1; S. H. Dawes, 50c.; Alfred Smith, L. K. Litchfield, G. B. Sawyer, C. H. Bradford, Alfred Woodman, Geo. H. Andrews, E. K. Whitney, R. H. Gardiner.
130. Rebecca. S. H. Dawes, \$1; E. K. Whitney.
131. Allen's Hybrid. (Not awarded.) Alfred Smith, H. McLaughlin.
132. Adriondac. S. H. Dawes, \$1; Alfred Smith.
133. Creveling. (Not awarded.) Alfred Smith.
134. Maÿssoit. S. W. Shaw, \$1; Alfred Smith.
135. Wilder. L. K. Litchfield, \$1; Alfred Smith; G. B. Sawyer.
136. Lindley. (Not awarded.) Alfred Smith, G. B. Sawyer.
137. Agawam. G. H. Andrews, \$1; J. H. Miller, 50c.; Alfred Smith, L. K. Litchfield, G. B. Sawyer, E. K. Whitney.
138. Merrimack. Alfred Smith, 50c.; L. K. Litchfield, G. B. Sawyer.
139. Salem. S. C. Harlow, \$1; J. H. Miller, 50c.; Alfred Smith, G. B. Sawyer, E. K. Whitney, H. McLaughlin.
140. Worden. (Not awarded.) Alfred Smith.
- Gratuities. John Vickery, Champion, 50c.; Henry McLaughlin, Isabella, 50c.

SUNDRIES.

James Chipman, Northern Muscadine; John Vickery, Martha, Blood Seedling; G. H. Andrews, Northern Muscadine, Sugar; J. H. Miller, Eumelan; D. J. Briggs, Northern Muscadine, Clinton; John Burr, Golden Hamburgh, Golden Chasselas; E. K. Whitney, Northern Muscadine, Iona, Isabella; A. Ross, Champion; R. H. Gardiner, Diana, Logan; H. McLaughlin, White Sweetwater; S. H. Dawes, Northern Muscadine, Iona.

CLASS 4.—*Plums and Miscellaneous Articles.*

141. For the best general exhibition of plums, not less than ten varieties. (No entry)

Entries for premiums Nos. 142 to 163, inclusive, must consist of not less than twelve specimens each.

142. For the best dish of plums of a single variety. Mrs. J. P. Longley, Lewiston. \$1; Dr. A. Garcelon, 50c.

143. For the best dish of Green Gage. Henry Ingalls, 50c.

144. Purple Gage. (No entry)

145. Red Gage. Henry Ingalls, 50c.

146. Yellow Gage. (No entry.)

147. Prince's Imperial Gage. Henry Ingalls, 50.

148. Coe's Golden Drop. (Not awarded) A. B. Chipman & Sons.

149. General Hand. (No entry.)

150. Lawrence. (No entry.)

151. McLaughlin. (No entry.)

152. Reine Claud de Bavay. (No entry.)

153. Lombard. (No entry.)

154. Columbia. (No entry.)

155. Magnum Bonum. (No entry.)

156. Washington. (No entry.)

157. Jefferson. (No entry.)

158. Penobscot. (No entry.)

159. Smith's Orleans. (No entry.)

160. For the best dish of peaches. C. W. Goddard, Portland. \$1; E. K. Whitney, gra., 50c.; H. M. Chase, gra., 50c.

161. For the best dish of apricots. (No entry.)

162. For the best dish of nectarines. (No entry.)

163. For the best dish of quinces. (No entry.)

164. For the best ornamental dish of fruit. Pulsifer Bros., Poland, \$1.

165. For the best peck of cultivated cranberries. E. K. Whitney, \$2; Alfred Smith, 1.

166. For the best samples of nursery apple trees. Alfred Smith, \$2; J. J. Towle, \$1.

167. For the best samples of nursery pear trees. Alfred Smith, \$2.

168. For the best samples of nursery grape vines. Alfred Smith, 50c; A. Smith & Son, Monmouth.

169. For best orange tree, in fruit. (No entry.)

170. For best lemon tree, in fruit. (No entry.)

171. For best fig tree, in fruit. (No entry.)

172. For best exhibition of canned fruits, not less than five varieties, of domestic manufacture. O. D. Stinchfield, Lewiston, \$2; Mrs. E. B. Miller, Lewiston, \$1; Alfred Smith, gratuity \$1; Joseph Taylor, Daniel Ayer.

173. For best exhibition of dried fruits, by any process. (No entry.)

174. For best exhibition of dried fruits, of domestic manufacture, the product of one family or individual. (No entry).

175. For best cider apple sauce. James Chipman, \$2; A. B. Chipman & Sons, \$1.

176. For best exhibition of fruit jellies, not less than five varieties, of domestic manufacture. Mrs. E. B. Miller, \$2; A. B. Chipman & Sons, \$1.

177. For best exhibition of pickles, domestic manufacture. (No entry.)

178. For best exhibition of horticultural tools (which need not be made by the exhibitor nor in this State. (No entry.)

179. For best exhibition of ornamental earthen ware (vases, flower pots, &c.,) made in this State. (No entry.)

180. For best oil painting of fruits or flowers. (No entry.)

181. For best drawing or other picture of same. (No entry.)
Gratuities, H. M. Chase, damsons, 50c.; Mrs. A. B. Berry, Auburn, wax flowers, 50c.

Sundries, Mrs. C. S. Gilbert, Lewiston, Toad stool; A. Ross, Egg Gourds; S. R. Leland, Farmington, apple picker.

CLASS 5,—*Flowers*.

In this class no article can be entered for more than one premium. Flowers entered for Special Premiums cannot be entered for the Society's Premiums.

All plants and flowers must be in position in the hall on the first day.

FIRST DIVISION.

182. For best display of cut flowers, filling not less than 100 phials, Geo. M. Roak, Auburn, \$5.

183. For best exhibition of Roses, not less than five varieties, Geo. M. Roak, \$2.

184. For best exhibition of Dahlias, not less than ten varieties, Mrs. Charles Stanley, Winthrop, \$2; Mrs. Z. A. Gilbert, East Turner, \$1; Mrs. A. M. Jones, Lewiston.

185. For best exhibition of Pinks. (Not awarded), N. J. Brackett, Lewiston.

186. For best exhibition of Japan Lilies. (No entry).

187. For best exhibition of Asters, not less than ten varieties, Mrs. C. Stanley, \$1; N. J. Brackett, 50c.

188. For best exhibition of Pansies. Miss Annie McLaughlin, Bangor, \$1; E. J. Brackett.

189. For best exhibition of Zinnias. [Not awarded.] N. J. Brackett.

190. For best exhibition of Phlox Drummondii. John Burr, \$1; Mrs. C. Stanley, 50c.

191. For best exhibition of Stocks. [No entry.]

192. For best exhibition of Balsams. [No entry.]

193. For best exhibition of Chrysanthemums. [No entry.]

194. For best exhibition of Petunias. [No entry.]
 195. For best exhibition of Gladiolus. Geo. M. Roak, \$2.
 196. For best exhibition of Tuberose. James Vickery, Portland, \$1.
 197. For best exhibition of Verbenas. John Burr, \$2; Hersey Day, Lewiston, \$1.

SECOND DIVISION.

198. For best pair of parlor bouquets. Geo. M. Roak, \$3; Nellie Haskell, Auburn.
 199. For best pair of wall bouquets. [No entry.]
 200. For best pair of hand bouquets. [Not awarded.] Geo. M. Roak.
 201. For best bouquet of Asters. N. J. Brackett, 50c.; Mrs. C. Stanley.
 202. For best bouquet of Dahlias. Mrs. C. Stanley, 50c.; Mrs. A. B. Berry, Mrs. Z. A. Gilbert.
 203. For best floral design. Geo. M. Roak, \$5.
 204. For best floral wreath. Geo. M. Roak, \$2.
 205. For best floral dinner table decoration. [No entry.]
 206. For best basket of wild flowers. Mrs. C. Stanley, 50c.
 207. For best exhibition of dried grasses. Mrs. C. Stanley, \$1; Hersey Day, Joseph Taylor, Mrs. Charles Clark, Lewiston.
 208. For best exhibition of everlasting flowers. Mrs. C. Stanley, \$1; N. J. Brackett, 50c.; Hersey Day.
 209. For best dish of cut flowers. Mrs. Z. A. Gilbert, \$2; N. J. Brackett.
Sundries. Geo. M. Roak, Bouquet Gladiolus; Mrs. Z. A. Gilbert, Vase flowers.

THIRD DIVISION.

210. For the best exhibition of Green House Plants. James Vickery, \$8; Geo. M. Roak, \$5.
 211. For the best exhibition of Ferns. James Vickery, \$3.
 212. For the best exhibition of Geraniums. G. M. Roak, \$2; John Burr, \$1, James Vickery.
 213. For the best exhibition of Begonias. John Burr, \$2; James Vickery, \$1.
 214. For the best exhibition of pot plants, not less than 20 pots. John Burr, \$3.
 215. For the best single pot plant. Mrs. R. N. Phillips, Auburn, \$1; James Vickery, 50c.; Z. C. Woodward, John Burr, Mrs. E. W. Bartlett, Lewiston; D. F. Sanborn, Lewiston; J. E. Crafts, Auburn; David D. Catland, Lewiston; Jenny L. Gilbert, East Turner.
 216. For the best hanging basket, with plants. James Vickery, \$3; Geo. M. Roak, \$1.

217. For the best Wardian case. (Not awarded) Z. C. Woodward.

218. For the best Aquarium, with plants. [No entry.]

219. For the best rustic stand, not less than three feet in height, to be filled with choice plants. James Vickery, \$1.

Special premiums offered by James Vick, Seedsman and Florist, Rochester, N. Y., to amateurs only.

220. For the best collection of cut flowers. Mrs. C. Stanley, \$20; Mrs. A. A. Sawyer, Wiscasset, \$10; Julia E. Crafts, Auburn, \$5; Hersey Day, floral chromo; E. J. Brackett.

221. For the best floral ornamental work, either bouquet or floral ornament. Mrs. C. Stanley, \$5.

CLASS 6.—*Garden Crops and Vegetables.*

222. For best exhibition and greatest variety of vegetables. Moses Crafts, \$5; Horace True, South Turner, \$3; Eli Hodgkins, Greene, \$2.

223. For best exhibition and greatest variety of potatoes, not less than five varieties, one peck of each variety. S. R. Sweetser, \$3; Horace True.

224. For the best single variety of potatoes, one peck. L. H. Blossom, Turner, \$1; James Chipman, Horace True.

225. For the best seed corn, not less than 20 ears in a trace. Moses Crafts, \$1; Horace True, 50c.; James S. Hoxie, Alfred Smith, A. B. Chipman & Sons, James Chipman.

226. For the best sweet corn, 12 ears. Horace True, \$1; Eli Hodgkins, 50c.; Alfred Smith.

227. For the best 10 blood beets. [No entry.]

228. For the best 10 turnip beets. [Not awarded.] James Chipman, Eli Hodgkins.

229. For the best cabbages, 6 heads. [No entry.]

230. For the best cauliflowers, 6 heads. [No entry.]

231. For the best carrots, 10 specimens. [Not awarded.] Eli Hodgkins.

232. For the best parsnips, 10 specimens. [No entry.]

233. For the best ruta bagas, 10 specimens. [Not awarded.] Horace True.

234. For the best English or strap leaf turnips, 10 specimens. James Chipman, 50c.

235. For the best celery, 6 roots. [No entry.]

236. For the best peppers. [Not awarded.] John Vickery.

237. For the best onions, half bushel. Alfred Smith, \$1.

238. For the best tomatoes, 25 specimens. S. R. Sweetser, \$1; A. B. Chipman & Sons, 50c.; John Vickery, David Farrar.

239. For the best marrow squash, 3 specimens. [Not awarded.] Eli Hodgkins.

240. For the best Hubbard squash, 3 specimens. [Not awarded.] Eli Hodgkins, Horace True.

241. For the best Butman squash. [No entry.]
242. For the best turban squash. [Not awarded.] Eli Hodgkins.
243. For the best Marblehead squash. [Not awarded.] J. M. Gamage, Auburn.
244. For the largest squash. [Not awarded.] Horace True.
245. For the best pumpkins. [Not awarded.] Horace True.
246. For the largest pumpkin. [Not awarded.] Horace True.
247. For the best musk melons, 3 specimens. [Not awarded.] L. J. Perkins, Horace True, Eli Hodgkins.
248. For the best water melons, 3 specimens. [Not awarded.] J. M. Gamage, Eli Hodgkins.
249. For the best citron melons, 3 specimens. [Not awarded.] Eli Hodgkins.

SUNDRIES.

Horace True, collection of beans, collection of peas, hops;
Eli Hodgkins, Snake cucumbers, Norbitan Giant cucumbers,
Russian Nettle cucumbers, Sugar beets.

THE ANNUAL MEETING OF THE SOCIETY

was held on Thursday, the third day of the exhibition, at four o'clock P. M., in accordance with notice duly given; twenty members were present.

The President, Z. A. Gilbert, on taking the chair, addressed the Society at some length, reviewing its history and progress, and declining a re-election.

The Society then proceeded to the election of officers for the ensuing year, with the following result:

<i>For President.....</i>	Henry Ingalls, Wiscasset.
<i>Vice Presidents</i>	Joseph Taylor, Belgrade. Granville Fernald, Harrison.
<i>Secretary.....</i>	George B. Sawyer, Wiscasset.
<i>Treasurer.....</i>	Henry McLaughlin, Bangor.

Executive Committee, (besides the President and Secretary *ex officio*.)

Samuel Rolfe.....	Portland.
Charles S. Pope.....	Manchester.
Andrew S. Sawyer.....	Cape Elizabeth.

For member of the Board of Agriculture, *Z. A. Gilbert, East Turner.

FOR TRUSTEES.

<i>Androscoggin....</i>	D. J. Briggs, South Turner.
<i>Aroostook.....</i>	Henry Tilley, Castle Hill.
<i>Cumberland.....</i>	Henry M. Chase, North Yarmouth.
<i>Franklin</i>	S. R. Leland, Farmington.
<i>Hancock.....</i>	C. G. Atkins, Bucksport.
<i>Kennebec</i>	W. P. Atherton, Hallowell.
<i>Knox.....</i>	Charles H. Jones, Warren.
<i>Lincoln.....</i>	H. J. A. Simmons, Waldoboro.
<i>Oxford.....</i>	N. T. True, Bethel.
<i>Penobscot.....</i>	S. C. Harlow, Bangor.
<i>Piscataquis....</i>	H. A. Robinson, Foxcroft.
<i>Sagadahoc.....</i>	J. H. Kimball, Bath.
<i>Somerset</i>	Galen Hoxie, North Fairfield.
<i>Waldo.....</i>	J. W. Lang, Brooks.
<i>Washington</i>	H. A. Sprague, Charlotte.
<i>York</i>	John Hanscom, Saco.

* To fill the vacancy caused by the resignation of George B. Sawyer, who was elected at the last Winter meeting and resigned at this meeting.

FOR COUNTY COMMITTEES,

under the vote passed at the winter meeting February 27-8, 1878:

<i>Androscoggin</i> ...	D. W. Pulsifer, East Poland.
<i>Aroostook</i>	Columbus Hayford, Maysville.
<i>Cumberland</i>	Edward K. Whitney, Harrison.
<i>Franklin</i>	Lyman F. Abbott, Wilton.
<i>Hancock</i>	No Choice.
<i>Kennebec</i>	Alfred Smith, Monmouth; R. H. Gardiner, Gardiner.
<i>Knox</i>	Elmas Hoffses, Warren, (P. O. Waldoboro'.)
<i>Lincoln</i>	C. R. Rice, Whitefield.
<i>Oxford</i>	J. J. Towle, Carthage.
<i>Penobscot</i>	John L. Leighton, Garland.
<i>Piscataquis</i>	H. L. Leland, Sangerville.
<i>Sagadahoc</i>	John A. Riggs, North Georgetown.
<i>Somerset</i>	S. T. Whittier, Athens.
<i>Waldo</i>	Horace Muzzy, Searsmont.
<i>Washington</i>	No Choice.
<i>York</i>	Edmund J. Young, Acton.

On motion of Joseph Taylor, voted unanimously, that the thanks of the Society be and are hereby tendered to Mr. Z. A. Gilbert, for his long and efficient services as President.

Voted, That the thanks of the Society be and hereby are tendered to the Mayor and officers of the city of Lewiston, also to the several railroad companies of the State for facilities afforded in aid of the present exhibition.

Voted, That the time and place for holding the Winter Meeting be referred to the determination of the Executive Committee.

Voted, That the annual reports of the officers be presented at the Winter Meeting.

Adjourned to meet at the office of the Secretary, in Wiscasset on the first Wednesday in December next.

At Wiscasset, December 4, 1878, the Society met pursuant to adjournment, and the meeting then adjourned to January 8, 1879, and thence to February 12, 1879, at the same place; when the reports of the Treasurer and Executive Committee for 1878, were presented, and, it having been found impracticable to fix upon a time and place for holding a Winter Meeting, adjourned to meet at the call of the Executive Committee.

TREASURER'S REPORT FOR THE YEAR 1878.

CHARLES S. POPE, TREASURER,

In Account with the Maine State Pomological Society.

Dr.

To cash in the treasury, January 1, 1878.....	\$167 35
amount received from the State, bounty for 1877..	500 00
“ “ for donated premiums of 1877...	30 50
“ “ of life members.....	50 00
“ “ of annual members.....	90 00
“ “ from sale of tickets at annual exhibition	214 73
“ “ from sale of fruit at annual exhibition	2 00
“ “ for use of tables in hall.....	3 00
“ “ for interest on permanent fund..	18 90
“ “ on temporary loan.....	275 00
“ “ of James Vick for special premiums, 1878	40 00
	<hr/> \$1,391 48

Cr.

By paid loan of 1877.....	\$250 00
“ interest on loans.....	14 98
“ orders of Executive Committee, drawn in '78	335 07
“ “ “ “ prior to '78	98 36
“ J. Vick's special premiums for 1878.....	40 00
“ on account of premiums of 1877.....	366 50
“ “ “ “ 1878.....	247 00
By cash in treasury, December 31, 1878	39 57
	<hr/> \$1,391 48

CHARLES S. POPE, *Treasurer.*

Report of the Executive Committee for the year 1878.

To the Members of the Maine State Pomological Society:

The Executive Committee hereby report that they have examined the account of the Treasurer, for the year ending December 31, 1878, and have found the same to be correctly stated and properly vouched.

They have drawn orders on the Treasurer during the year as follows:

For outstanding bills of 1877.....	\$11 50
Expenses of Winter Meeting, 1878.....	40 07
Expenses of annual exhibition, 1878.....	243 61
Miscellaneous expenses.....	39 89
	———— \$335 07

The items of expenditure embraced in the foregoing orders, are:

Bills of exhibition of 1877.....	\$11 50
Postage, express, &c.....	45 20
Printing and stationery, &c.....	72 20
Stenographic report of Winter Meeting.....	10 00
Janitor at Winter Meeting.....	4 00
Labor and materials at annual exhibition.....	100 18
Travelling expenses of officers.....	91 99
	———— \$335 07

Showing a reduction of expenses, as compared with the preceding year, of \$165 10.

The officers have, as heretofore, received no compensation, except for actual expenses incurred in attending to the business of the Society.

STATEMENT of the financial condition of the Society on the 31st day of December, 1878:

ASSETS.

Cash in the treasury.....	\$39 57
on deposit, (permanent fund,).....	420 00
Accrued interest on same.....	5 25
Amount due from the State for 1878.....	500 00
Property owned by the Society, estimated.....	100 00
	———— \$1,064 82

LIABILITIES.

Amount due on temporary loans.....	\$415 00
of orders drawn and unpaid.....	102 53
of unpaid premiums of 1878	184 25
of permanent fund.....	420 00
due to same for life membership fees.....	100 00
of bills not rendered, estimated.....	21 59
	————— \$1,243 37

Excess of liabilities (including permanent fund,) over assets \$178 55.

By order of the Executive Committee,

GEORGE B. SAWYER, *Secretary*.

WISCASSET, Feb. 12, 1879.

MEMBERS OF THE SOCIETY.

INCLUDING ALL NAMES REGISTERED UP TO FEB. 12, 1879.

NOTE.—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full christian names where initials only are given.

LIFE MEMBERS.

Atherton, H. N.....	Hallowell
Atherton, W. P.....	Hallowell
Atkins, Charles G.....	Bucksport
Atwood, Fred	Winterport
Burr, John.....	Freeport
Carter, Otis L.....	Etna
Chase, Henry M.....	North Yarmouth
Clark, Eliphalet.....	Portland
Crafts, Moses.....	Auburn
Crosby, William C	Bangor
Rocher, Peter.....	Waterville
Dirwanger, Joseph A.....	Portland
Dyer, Milton.....	Cape Elizabeth
Emerson, Albert	Bangor
Farnsworth, B. B	Portland
Frost, Oscar F.....	Monmouth
er, Robert H.....	Gardiner
Gilbert Z. A, ,.....	East Turner

Godfrey, John E.....	Bangor
Harlow, S. C.....	Bangor
* Harris, N. C.....	Auburn
Hersey, T. C.....	Portland
Ingalls, Henry.....	Wiscasset
Jewett, George.....	Portland
Low, Elijah.....	Bangor
Low, S. S.....	Bangor
McLaughlin, Henry	Bangor
Metcalf, M. J.....	Monmouth
Moore, William G.....	Monmouth
Morton, Will. E.....	Allen's Corner
* Noyes, Albert	Bangor
Pope, Charles S.....	Manchester
Pulsifer, D. W.....	Poland
Richardson, J. M.....	Greene
Roak, George M.....	Auburn
Robinson, H. A.....	Foxcroft
Rolfe, Samuel	Portland
Sawyer, Andrew S.....	Cape Elizabeth
Sawyer, George B.....	Wiscasset
Smith, Alfred.....	Monmouth
Smith, Henry S.....	Monmouth
Starrett, L. F.....	Warren
Stetson, Isaiah.....	Bangor
Strattard, Mrs. A. B.....	Monroe
Sweetser, S. R.....	Cumberland Centre
Taylor, Joseph.....	Belgrade
Thomas, William W. Jr.....	Portland
Tilton, William S.....	Chelsea
Varney, James A.....	North Vassalboro'
Vickery, James.....	Portland
Wade Patrick.....	Portland
* Weston, James C.....	Bangor
Whitney, Edward K.....	Harrison
Woodman, George W.....	Portland

* Deceased.

ANNUAL MEMBERS

Including only those who have paid dues for the year 1878, or in advance for 1879 :

Andrews, Geo. H.....	Monmouth
Allen, B. E.....	Greene
Ayer, Daniel.....	North Vassalboro'
Bradford, A. E.....	Turner
Bickford, I. C.....	Lewiston
Berry, A. B.....	Auburn
Blossom, L. H.....	Turner
Blanchard, Wm. E.....	Cumberland Centre
Blanchard, Fenwick.....	Cumberland Centre
Brackett, Mrs. N. J.....	Lewiston
Briggs, D. J.....	South Turner
Cumston, Charles M.....	Monmouth
Clough, George M.....	Monmouth
Carey, Francis.....	Turner
Chipman, James.....	Poland
Chipman, A. B.....	Poland
Coburn, J. G.....	Lewiston
Dawes, S. H.....	Harrison
Day, Hersey.....	Lewiston
Fernald, Granville.....	Harrison
Fuller, A. J.....	Bath
Fogg, George W.....	Monmouth
Farrar, David.....	Lewiston
Farr, Loring.....	Manchester
Gerrish, O. K.....	Portland
Garcelon, C. C.....	Lewiston
Goddard, C. W.....	Portland
Guild, Samuel.....	Augusta
Hoxie, Galen.....	North Fairfield
Ham, John L.....	Lewiston
Hodgkins, Eli.....	Greene
Hoffses, Elmas.....	Warren
Johnson, Isaac A.....	Auburn
Leland, S. R.....	Farmington
Litchfield, L. K.....	Winthrop
Longley, Mrs. J. P.....	Lewiston
Leighton, John L.....	Garland

Marshall, Isaac N.....	New Bedford, Mass.
Muzzy, Horace.....	Searsmont
Miller, James H.....	Lewiston
Nealey, A. B.....	Lewiston
Perkins, L. J.....	Dcering
Parker, B. F.....	Livermore Falls
Percival, Joseph.....	Waterville
Prince, Rufus.....	Turner
Parker, F. W.....	Lewiston
Parker, Henry D.....	Livermore Falls
Pennell, William D.....	Lewiston
Pulsifer, A. D.....	Poland
Phillips, Mrs. R. N.....	Auburn
Robbins, C. S.....	Winthrop
Randall, T. P.....	East Auburn
Robinson, E. C.....	Cape Elizabeth
Ross, A.....	Auburn
Rogers, Frank S.....	Portland
Stanley, Charles.....	Winthrop
Shaw, S. W.....	Minot
Stinchfield, O. D.....	Lewiston
Tilley, Henry.....	Castle Hill
True, N. T.....	Bethel
Tinkham, A. W.....	North Monmouth
Towle, J. J.....	South Carthage
True, Horace.....	South Turner
Vickery, John.....	Auburn
Whittier, Silas T.....	Cornville
Woodward, F. M.....	Winthrop
Woodward, Z. C.....	Minot
Wood, S. S.....	Lewiston
Wilson, John.....	Cumberland
Young, Edmund J.....	Acton



